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MARCH 8, 2004 ■ VOL. 38 ■ NO. 10 ■ $5/COPY

SCO Sues Two Linux Users, Warns About Further Action

DaimlerChrysler, AutoZone hit with charges; Linux user community remains defiant

BY TODD R. WEISS

Following through on threats it started making 10 months ago, The SCO Group Inc. last week filed its first lawsuits against corporate Linux users, targeting automaker DaimlerChrysler AG and auto parts retailer AutoZone Inc.

The twin lawsuits expand SCO's legal campaign against Linux backers into a new realm, and SCO executives warned that more users of the open-source operating system could face legal action if they don't license the company's Unix software or certify that they're complying with existing contracts.

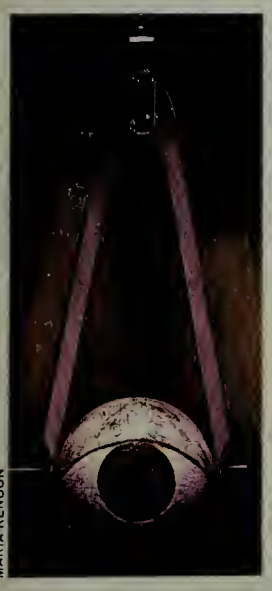
But the threat may be falling on deaf ears. A sampling of Linux users, who for months have said they're not worried about SCO's allegations, since nothing has been proved in court, maintained that stance following last week's lawsuits.

"We're not at all concerned about it," said Tim Kuchlein, director of IS at New York-

SCO Suits, page 57

ONLINE

For ongoing coverage of SCO's legal battle, visit our Web site: QuickLink a3260



MARIA RENOON

A guide to the strengths and weaknesses of six IT quality frameworks, from CMM to Six Sigma. Page 41

Model Mania

Who's Driving the Security Train?

INVESTIGATIVE REPORT One year after the Department of Homeland Security released its National Strategy to Secure Cyberspace, corporate IT executives say the public/private partnership plan is on the periphery at best. Dan Verton investigates the marginalization of a government strategy that was supposed to guide your company's cybersecurity initiatives. Story begins on page 6.

MATT FAULKNER

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- Cybersecurity czar Amit Yoran is in Congress' hot seat. Page 7
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ONLINE

- Corporate America has strengthened both physical and cyber security, a Business Roundtable survey finds: QuickLink 45262

Users Getting New Benefits From BizTalk

Update goes beyond application integration

BY CAROL SLIWA

For years, companies have used Microsoft Corp.'s BizTalk Server primarily for application integration, to transform data from the widely varying formats of their business applications so it can be routed to other systems inside and outside their firewalls.

But early adopters of the 2004 edition that Microsoft launched last week have been finding new ways to make use of its scalable rules engine, enhanced business process management and business activity monitoring capabilities.

Virgin Entertainment Group Inc., for instance, is using BizTalk Server's new rules engine and business activity monitoring features to curb employee

BizTalk Server, page 57

ONLINE Q&A

Microsoft's top BizTalk executive talks about the biz:
QuickLink 45214
www.computerworld.com

IT Struggles To Become More Agile

Adapting to business needs is a rocky road

BY THOMAS HOFFMAN
SAN DIEGO

Many companies are eager to make their IT departments more agile so they can respond faster to changing business demands. But getting there is likely to be a long, arduous process, said about a

Agile IT, page 16

NEWSPAPER

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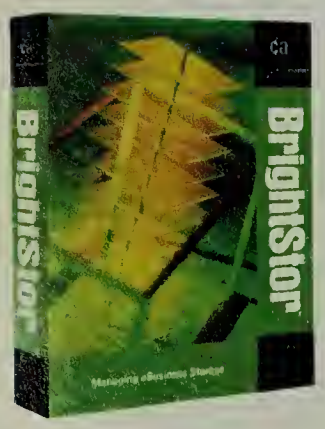

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The Database Diet

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INVESTIGATIVE REPORT

Who Holds the Security Reins?

The Department of Homeland Security unveiled its National Strategy to Secure Cyberspace a year ago. Is the plan working? IT professionals say it's the private sector that's taking the lead on security initiatives, making the strategy largely irrelevant.

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Premier 100 Conference Coverage

Get the latest news headlines from this week's event, see complete results of surveys of conference attendees and lots more.

Full coverage overview **QuickLink a4100**

Conference news updates **QuickLink a1660**

Complete survey results and other special coverage (registration required) **QuickLink a4130**

Conference blog (beginning Tuesday) **QuickLink 45236**

Harden Your Wireless LANs

MOBILE/WIRELESS: Atul Bhatnagar of Nortel Networks has tips on improving WLAN security and performance . **QuickLink 44996**

Combating Zero-Day Exploits

SECURITY: It's a challenge, but there *are* steps you can take to protect your systems against unpublished security holes, says Abhay Joshi of Top Layer Networks. **QuickLink 43564**

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DHS Gets Relegated to the Corporate Security Margin

One year after the National Strategy to Secure Cyberspace was released, IT professionals suggest that it may be a waste of taxpayer dollars. By Dan Verton

INVESTIGATIVE REPORT

WHEN THE White House released the National Strategy to Secure Cyberspace in February last year, the guiding principle was to make it a "living document" capable of changing with the times and meeting the needs of a diverse Internet community.

But in the year since its release, the strategy has had little or no impact on the security plans and investments of many of the companies that were supposed to be integral to its implementation, corporate IT executives say. And although some critical-infrastructure sectors have heeded the government's call to action, many corporate users still view the plan as irrelevant to the challenges they face.

"Although we all do our best in thinking strategically about issues like [the national strategy], they are at the bottom of any list I have," said John Spencer Jr., vice president of operations and CIO at the American Society of Health-System Pharmacists in Bethesda, Md. "What's the payoff?

"I have existing budgets that change by the day, I'm trying to patch the holes in my Microsoft-based infrastructure daily and weekly, [and] new and different variants of viruses are running rampant," Spencer said. "I could give you a list of 100 things like this that I'm addressing by the minute, day and week. I can see cause and effect related to these issues, but not so with this strategy."

MATT FAULKNER

Begging vs. Regulating

For IT managers like Spencer, "cause and effect" translates into detailed justification for increasing resources to do what the U.S. Department of Homeland Security's National Cyber Security Division (NCSD) is asking of companies across the country: to belly up and take the lead in securing cyberspace. The threatened alternative: unwanted regulation.

The irony is that in the private sector, the onset of new regulations — regulations that have nothing to do with the DHS — has in fact forced improvements in cybersecurity, users and analysts say.

For example, Davidson Healthcare in Lexington, N.C., along with every other company in the health care industry, faces on April 15 the nonnegotiable activation of the Health Insurance Portability and Accountability Act, which requires enhanced security to protect private patient data.

> "They're not implementing the strategy in a serious way. I think largely we've dropped the ball."
>
> **RICHARD CLARKE,** former chairman of the President's Critical Infrastructure Protection Board

Unlike HIPAA, however, the release of the national strategy "hasn't necessarily provided any [justification] for additional funding," said Kevin Buchanan, director of IT at Davidson Healthcare. "HIPAA is not a recommendation; it's federal law. And when I say something is a federal requirement, senior managers can't argue with that."

In addition to HIPAA and laws that cover financial reporting, such as the Sarbanes-Oxley Act, pressing business requirements often force security improvements upon senior executives, said Fred Held, a partner at Tatum CIO Partners LLP in Los Angeles.

Held, who recently completed an assignment as CIO at a national distribution company, said it was a recent merger agreement, not the National Strategy to Secure Cyberspace, that drove his temporary employer to evaluate its security.

And therein lies the disconnect, said Craig Janus, vice president of the Center for Information and Telecommunications Technologies at Falls Church, Va.-based Mitretek Systems Inc.

"There is no cohesiveness built into the strategy," said Janus. "There are no incentives [such as] tax credits or cost sharing to encourage, if not force, the private sector to do more."

The DHS declined to re-

Security Grants Up for Grabs

ObjectVideo provides intelligent video surveillance software used at airports, seaports, U.S. borders, oil refineries, chemical and nuclear plants, and public water supply facilities. **Raul Fernandez**, the Reston, Va.-based company's CEO, who also serves on the President's Council of Advisors on Science and Technology, spoke with *Computerworld* about how the company is helping clients apply for the millions of federal dollars being made available for homeland security pilot projects.

What companies have you done this for, and who is eligible? We've provided government-proposal assistance for major airports and petroleum companies, and we've advised several local and state law-enforcement agencies. Grants are set aside for commercial, state and local organiza-

spond directly to the comments. Amit Yoran, head of the NCSD, had agreed several weeks ago to meet with *Computerworld* on March 2, but he canceled the interview only hours before it was to take place. Instead, a spokesman for Yoran provided a written statement that offered no new details about the national strategy or efforts to collaborate with the private sector.

Money Well Spent?

If the national strategy is ineffectual, it's not because there's no money to bolster it. The Bush administration has requested $31 million for IT security efforts as part of the fiscal 2005 budget proposal for the Information Analysis and Infrastructure Protection Directorate at the DHS. It has also requested $1.9 million for expanded cybersecurity exercises to uncover vulnerabilities.

The question being asked by many corporate users is whether the money should be spent on the national strategy. While there are signs that the public/private partnership called for in the plan is beginning to slowly pick up steam, many users credit private-sector programs and initiatives that were under way well before the strategy was released.

"In my opinion, a large part of the cybersecurity strategy is aimed at vendors and service providers of IT solutions," said Rick Perry, director of enterprise operations and security at The Burlington Northern and Santa Fe Railway Co.

Perry said rail companies have voluntarily and without goading by the DHS formed the Rail Industry Security Committee to share best practices and rail security alert plans that cover both physical and cybersecurity.

Moreover, Fort Worth, Texas-based Burlington Northern recently began working on a pilot program sponsored by the U.S. Department of Defense's Intelligence Systems Support Office called Operation Picket Fence.

The purpose of the program, which will begin this spring, is to provide improved network security, install and maintain intrusion-monitoring and cyberdefense equipment, and establish a centralized monitoring and management facility for the coordination of responses to cyberterrorism, said Perry.

Likewise, in the natural gas industry, "all of the initiatives are industry-driven" and aren't a result of the national strategy, said Gary Gardner, CIO of the American Gas Association.

For example, the association and the Gas Technology Institute this year plan to release an encryption protocol that's capable of supporting SCADA systems that are used to manage natural gas systems, the electric grid, water systems and other industrial control infrastructures.

Decades Away?

Although Yoran's appointment in September to lead the NCSD has added some momentum to the government's strategy, "for most people in the industry, I'm sure it's a plan that's sitting in a file somewhere," said

Continued on page 8

Yoran Grilled at Senate Hearing

WASHINGTON – It was an inauspicious moment for Amit Yoran, the federal cybersecurity czar.

"Have you focused on a threat assessment?" asked Sen. John Kyl (R-Ariz.), chairman of the Senate Subcommittee on Terrorism, Technology and Homeland Security, during a Feb. 24 hearing on cyberterrorism. The nation is "awash in a sea of vulnerability studies," said Kyl. But what is missing, he said, is "an accurate threat assessment" about what the country should worry about most: individual hackers, nations or terrorist organizations.

For several tense moments, Yoran sat in silence and then shielded his microphone as he whispered to a colleague from the FBI.

"Our protection strategy is threat-independent," Yoran finally replied. Rather than focusing on specific attack profiles, "we are developing programs and initiatives that apply to the gamut of attack approaches," he added.

"I still haven't heard you say you have done a threat assessment," responded Kyl.

Frustrated by the line of questioning, Yoran turned around and faced an underling from the DHS and pointed angrily to a sheet of paper on which was written "NIE."

"We'll have to wait and see what the NIE says," Yoran said, referring to a classified National Intelligence Estimate that was scheduled to be released within days of the hearing.

Sen. Dianne Feinstein (D-Calif.), the ranking member of the subcommittee, also posed tough questions to Yoran, particularly about his position within the DHS bureaucracy.

"My concern is that we don't really take cyberterrorism as seriously as we should," said Feinstein, adding that she was troubled by the decision to move the position once held by former cybersecurity czar Richard Clarke from the White House to where it now sits, several layers down in the DHS bureaucracy. "Given your lack of seniority, how are you able to direct assistant secretaries in other directorates?"

YORAN's answers didn't satisfy skeptical legislators.

"There are advisers within the White House who maintain a very close awareness of cyberactivity and cyberprotection," said Yoran.

However, Clarke and his immediate successor, Howard Schmidt, both acknowledged that the Office of Management and Budget, which has statutory authority for cybersecurity programs, has only three people working on the issue full time. "If they were serious about it, they would have 20 to 30 people working it," said Clarke.

When the hearing ended, Kyl was visibly frustrated with the inability to get direct answers from Yoran and said he didn't want to have "to grill anybody."

But it didn't appear to be Kyl's fault. A prominent IT industry executive who attended the hearing but did not want to be identified by name characterized Yoran's performance as "terrible."

– Dan Verton

tions and sometimes for academic associations. But there is a definition of *critical infrastructure* that is used to determine justification.

Where can they find information on grants? Award announcements are usually made on agency Web sites and on Web sites like *www.FedGrants.gov* and *www.grants.gov*.

How much money is available? The federal government distributes billions of dollars in grants each year, though obviously that gets spread over a large number of grant programs intended for a very wide variety of purposes.

The individual programs that usually apply to our customers will range from $2 million to $20 million per grant. Each grant program and each round of grants may have different levels of funding.

What are the steps involved in the grant process? First, it's very important to do a needs analysis with the client to truly understand their business and requirements. Then we typically identify a short list of two or three grant programs and determine which one will best meet the client's needs and time frame.

On average, it takes anywhere from two weeks to two months to submit the proposal. The actual writing of the proposal is the quickest part of the process. The most difficult is the gathering of information necessary for the proposal.

Why would clients need your company's help instead of doing it themselves or hiring a proposal writer? There is an art to writing government proposals, because you have to understand the funding agency's needs and terminology. For instance, you need to know what "force protection" means to the program manager at DOD in order to answer questions pertaining to it in the proposal.

– Dan Verton

DHS Gets Relegated to the Corporate Security Margin

Continued from page 7

Gardner. "Is it driving the train? I'm not sure."

At the first National Cyber Security Summit, held in Palo Alto, Calif., in December, and again during an event last month marking the one-year anniversary of the strategy's release, Yoran said the NCSD had moved "from national strategy development and articulation to implementation."

As evidence of that shift, Yoran pointed to a number of programs designed to prevent cyberattacks and enable an effective response to attacks that do occur (see box, above right). But he cautioned that the benefits from many of the "strategic level" programs, such as those in the area of software assurance, may not be realized for years or even decades.

"Even if R&D were not required and the tools were readily available for us to develop more secure code, this technology would still have to work its way into the compilers of several development tools commonly used by the software development community," said Yoran. "And once that occurs, there are annual

NCSD's Initiatives to Date

- **U.S. Computer Emergency Readiness Team (US-CERT):** Administers the National Cyber Alert System.
- **Chief Information Security Officers Forum:** A secure collaboration environment for federal CISOs.
- **Forum of Incident Response and Security Teams:** An information-sharing mechanism for members of federal CERTs.
- **Cyber Interagency Incident Management Group:** Brings together experts from federal law enforcement, defense and intelligence communities.
- **Critical Infrastructure Warning Information Network:** A private, secure and survivable network for use in the event of an Internet outage.

> "I'm sure it's a plan that's sitting in a file somewhere. Is it driving the train? I'm not sure."
>
> **GARY GARDNER, CIO, American Gas Association**

or longer development cycles before more secure products hit the marketplace. And then we start the long and multi-year cycle of technology refresh and upgrades."

But Richard Clarke, who published the National Strategy to Secure Cyberspace as his last official act as chairman of the President's Critical Infrastructure Protection Board before leaving for the private sector last March, said all of the programs called for in the document could be started immediately.

"They could all be done today if the government wanted to," Clarke said. "There's no technological reason [for the delay]. It's just a matter of will and resources."

The government "is not sitting down with the electric power, transportation, banking and finance, and other industries and saying, 'Show us how you're implementing the national strategy,' " said Clarke. "They're not implementing the strategy in a serious way. I think largely we've dropped the ball." **45224**

MORE ONLINE

For DHS coverage, visit the Watching Washington page on our Web site:

QuickLink s1300
www.computerworld.com

Credits

- Writer: Dan Verton
- Designer: Julie Quinn
- Editor: Don Tennant

CPAs Set an Industry Example

The American Institute of Certified Public Accountants Inc. (AICPA) has had a strategy for improving national cybersecurity for more than five years. The New York-based organization is now working with the Center for Internet Security on integrating its guidelines with the center's technical benchmarks. The CIS is a Hershey, Pa.-based nonprofit security standards consortium of more than 170 companies.

Known as Trust Services, the AICPA's auditing guidelines were presented to the White House in a briefing prior to last year's release of the National Strategy to Secure Cyberspace. The guidelines, which can be downloaded free of charge [QuickLink a4120 for a PDF], are a central part of the discussions on Capitol Hill surrounding proposed legislation that would require publicly traded companies to conduct independent security audits and detail the results in their annual reports [QuickLink 43497].

Trust Services are "guidelines that came out in 1999 to enable CPAs to assess security, privacy and availability of information systems," said Michael Dickson, a CPA at Columbus, Ohio-based Business Technology Group LLC who also holds the AICPA's coveted Certified Information Technology Professional designation. "The thing that differentiates our standard from others is that we can issue an assurance report, which is like an audit report."

"People may not have been aware that CPAs are in the security space, the privacy space and the confidentiality space," said Karyn Waller, a CPA and senior technical manager at the AICPA. But what really makes the AICPA approach attractive on a national scale is that the guidelines are flexible and scalable over time and the results will be consistent from company to company, she said.

"The idea is that two different CPAs looking at the same set of circumstances have a very good chance of coming up with the same results," said Dickson. "They are generic enough to facilitate the audit process but specific enough to ask questions about firewall settings and if unnecessary services have been disabled."

The problem on a national scale is that there are more than a dozen standards available that companies can follow, but not all of the standards are applicable to all business types or industry sectors, said Dickson.

Alan Paller, director of the Bethesda, Md.-based SANS Institute, sits with representatives of the AICPA on a task force that was formed by Rep. Adam Putnam (R-Fla.) to devise security best practices for the private sector. He said he wasn't happy with the AICPA approach until very recently because of its general, non-technical focus on security.

However, Paller said the AICPA's recent effort to work with the CIS's benchmark applications "will make the results much more comparable [among companies] and immediately useful."

– Dan Verton

Trust Services' High-Level Criteria

- **SECURITY.** The system is protected against unauthorized access (both physical and logical).
- **AVAILABILITY.** The system is available for operation and use as committed or agreed.
- **PROCESSING INTEGRITY.** System processing is complete, accurate, timely and authorized.
- **ONLINE PRIVACY.** Personal information obtained as a result of e-commerce is collected and retained as agreed.
- **CONFIDENTIALITY.** Information designated as confidential is protected as committed or agreed.

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AT DEADLINE

Windows XP SP2 Could Break Apps

Microsoft Corp. warned last week that Service Pack 2 for Windows XP, to be released later this year, could render some applications inoperable. Because of security enhancements made at the expense of backward compatibility, Microsoft is advising code tests against the SP2 beta [QuickLink 45255].

Dell President to Become New CEO

Dell Inc. founder Michael Dell will relinquish his CEO title to current President and Chief Operating Officer Kevin Rollins, the company announced last week. Dell will remain chairman of the company's board of directors. The move will become effective July 16.

Code Inspection Tool Makes Debut

Reasoning Inc. today will unveil a security inspection service aimed at companies that develop C or C++ code. Mountain View, Calif.-based Reasoning's service will help companies find and fix root-cause security vulnerabilities that are the leading targets of hackers, officials said. Final pricing hasn't been determined but is expected to be 20 cents per line of code inspected.

Short Takes

The U.S. SECURITIES AND EXCHANGE COMMISSION has requested information regarding Electronic Data Systems Corp.'s Navy/Marine Corps Intranet contract. . . . SUN MICROSYSTEMS INC. appointed Marissa Peterson as executive vice president for Sun Service, replacing Patricia Sueltz. . . . More than 50 members of Congress plan to introduce a bill that would make companies ineligible for government financial assistance if their policies favor overseas workers at the expense of U.S. workers [QuickLink 45204].

MARK HALL ▪ ON THE MARK

Offshore Advocates Woo Silicon Valley . . .

. . . execs and **denounce politicians who campaign against** the shipping of U.S. high-tech jobs abroad. At the Software 2004 conference in San Francisco last week, Romesh Wadhwani, chairman of Symphony Technology Group LLC in Palo Alto, Calif., exhorted an audience of 1,100 IT vendor honchos, including 400 CEOs, to get on the offshore bandwagon in order for their companies to have a viable, profitable future. "Most software companies that reinvent their business model will use offshore in a large and strategic, not tactical, way," he argues. Translation: More software development work is heading to India. As Computer Associates CEO Sanjay Kumar remarks, **"If you work behind a computer screen, your job is up for grabs."** ▪ Some politicians' jobs may hinge on their positions on outsourcing IT work to India, and a few are getting critical of the trend, which amuses Wadhwani. He quips, "You know when politicians say something is bad, that's a good thing." ▪ In an often rambling and disjointed keynote talk at the same event, **Ray Lane also endorsed the exodus of U.S. jobs to India.** The former chief operating officer of Oracle Corp. who's now a general partner at Kleiner Perkins Caufield & Byers, Silicon Valley's leading venture-capital firm, claimed that for every IT development dollar sent to Bangalore, $1.14 gets generated in the U.S. Pointing to the distinction between the two political parties on the issue, Lane concludes, "You should be able to figure out how I'm going to vote in November." ▪ Charles Stevenson keeps his politics to himself, but he readily shares his views on outsourcing. He is the chief technology officer as well as COO at Gupta Technologies LLC, a database and software tools vendor in Redwood Shores, Calif. As such, **he's intimate with the *tactical* value of outsourcing.** After all, he cut five quality assurance jobs and gave the work to Sonata Software Ltd. in Bangalore. But he says he did so to protect 68 workers in the U.S. He suggests the views of **Wadhwani and Lane "are completely out of sync with the reality of innovation."** He explains that face-to-face collaboration is key for critical product architecture, design and core development work. By tactically adding Sonata's quality assurance work, he's able to push projects out the door 33% faster. This is true, in part, because his California programmers can see Sonata's analysis of their previous day's coding when they reach their desks in the morning. With an in-house quality assurance team, there would be another day in between to slow things down. ▪ Another Silicon Valley executive who isn't buying the wholesale rush to offshore is Jim Green, CEO of Composite Software Inc. in San Mateo, Calif. Green says he doesn't care whether your developers are in Boston or Bangalore, you better have a **foolproof way to manage a distributed development environment.** And if you have one, please share it with him, because he hasn't seen one yet. Green says "teamwork and staying close to the customer" were critical during the development of the Composite Information Server, a technology that lets you run queries on multiple sources through a single view of the data. When you're spending R&D money, Green argues, you want every dollar invested to return $10, which means success is paramount. "How do you maximize your confidence that an R&D project will be successful?" he asks. Saving a few nickels by going overseas is nice, but will the extra management and communication hassles put the project at risk? Maybe, maybe not. It's your choice. **That's why they pay you the big bucks.** ▪ With the flood of venture-capital dollars drenching Silicon Valley this year, maybe companies there won't have to move jobs abroad. "There's so much venture money in the Valley, it's obscene," says Michael Howard, CEO of OuterBay Technologies Inc., which just moved into its snazzy new headquarters in Cupertino, Calif. He points to a recent $900 million venture-capital fund so desperate to invest the cash hoard that it hired a dozen telemarketers to **call execs like Howard and beg them to take their money.** He says he treated them like he does other telemarketers. **Click! 45222**

Software Stats

- Venture capitalists invested $3.6 billion in software companies in 2003.
- The top U.S. capital investment is in software, with $203 billion projected to be spent in 2004.
- 84% of software companies are sending work offshore.

SOURCE: SAND HILL GROUP

Actuate Readies Reporting Tools Upgrade

BY MARC L. SONGINI

Actuate Corp. is upgrading its server-based reporting applications to help streamline the process of developing frameworks for generating reports and to let IT staffers more effectively monitor the software's use.

Company officials last week outlined plans for the Actuate 8 upgrade, which is due for shipment this summer. It will include new user-based pricing in place of the existing processor-based license fees.

To ease access to disparate data sources for end users, Actuate 8 will include new enterprise information integration tools, said Pete Cittadini, the South San Francisco-based vendor's CEO. The integration capabilities are being drawn from technology that Actuate acquired last summer when it bought Nimble Technology Inc., a maker of data integration software for building Web services connections or portal applications.

Nimble's tools will supplement conventional data extract, transform and load mechanisms and will let IT workers develop reporting routines without having to understand the underlying database plumbing, Cittadini said. For instance, report developers will be able to use an XML-based abstraction layer to pull information from various data sources.

Actuate is also adding tools to let IT administrators view which end users are employing the reporting software, Cittadini said. That's intended to help IT staffers gauge user adoption rates and make decisions about resource allocation and other operational issues, he added. Currently, such monitoring requires the use of a third-party tool.

The usage monitoring feature could help IT managers judge the success of Actuate 8 rollouts, said Phil Russom, an analyst at Forrester Research Inc. With the new software, IT workers will also be able to measure peak usage times on the reporting server and the use of the software by departments, he said. **45213**

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IT Leader Survey Shows Upbeat Outlook for '04

But attendees of this year's Premier 100 conference still see security as key issue

BY TODD R. WEISS

IN AN EXCLUSIVE SURVEY in advance of *Computerworld*'s 5th Annual Premier 100 IT Leaders Conference, a large majority of the IT executives who responded to the poll said they're very optimistic about the future of IT as a strategic contributor to their businesses' success.

The survey was designed to gauge how 2004 is shaping up for IT, and of the 159 respondents, 25% said they're "somewhat" optimistic, while just 2% reported that they aren't at all optimistic. IT professionals who registered for the conference, which opens today in Palm Desert, Calif., were polled on a range of topics, from security to open-source software and outsourcing.

Security remains a huge concern, with 57% of those polled saying that viruses, worms and other attacks cause the greatest expense or potential for disruption on a daily basis, while 24% said patch management is the most costly or disruptive security task.

About 34% of the respondents said Linux will have an increased presence in their IT infrastructures this year, while 31% said they don't use it or plan to use it. Another 21% plan to keep their Linux usage at current levels.

U.S.-based IT hiring this year will increase for 44% of the respondents, while almost the same number, 43%, plan to keep staffing levels the same. Only 13% expect staffing cutbacks.

Mixed Agendas

In interviews, several conference attendees talked about the survey results and the IT issues they face.

Joseph Cleveland, CIO at aerospace and defense contractor Lockheed Martin Corp. in Bethesda, Md., and president of Lockheed Martin Enterprise Information Systems, agreed that security is a major focus. "We are beefing up all of the tools that we need for intrusion detection," he said.

"We are beefing up all of the tools that we need for intrusion detection."

JOSEPH CLEVELAND, CIO, LOCKHEED MARTIN CORP.

William Farrow III, CIO of the Chicago Board of Trade, said his hiring will increase this year to keep up with new trading and money-transfer systems designed to modernize the exchange. "As you expand your technical platforms, you have to expand your people to run it," he said.

Marina Levinson, CIO at handheld device vendor PalmOne Inc. in Milpitas, Calif., said she expects the use of Linux at her company to increase. A Linux-based e-commerce platform the company inherited with its purchase of Handspring Inc. will become more widely used for PalmOne's Web site, she said. "We want to leverage and expand that," she said.

And Jason Glazier, chief technology and e-commerce officer at Philadelphia-based Lincoln Financial Group, praised the merits of on-demand technology and said his company will be moving to the technology later this year. "It definitely has applications to Lincoln," Glazier said.

45231

PREMIER 100 SURVEY STATS

UTILITY OR ON-DEMAND COMPUTING

When asked if they are considering or implementing utility or on-demand computing technology:

33%	said they are evaluating it but have made no decision
29%	reported they aren't considering implementing it because they don't have applications suited for a utility model
23%	reported they weren't considering it because there are too many uncertainties
11%	said they had implemented some aspects of it
4%	reported planning to switch to a utility model for some or all applications in the next 12 months

WEB SERVICES

When asked what is impeding their company's adoption of Web services:

25%	said security is the greatest obstacle
22%	cited lack of in-house skills to support the technology
22%	said product immaturity is the greatest obstacle
12%	cited a lack of standards
8%	said cost is the greatest obstacle
3%	said there are no obstacles
3%	indicated infrastructure/architecture issues
5%	cited a variety of other obstacles

BASE: 153

REGULATORY COMPLIANCE

When asked to gauge their IT organizations' involvement and their own involvement in their companies' regulatory compliance activities:

52%	said they are substantially involved but not in charge
24%	said they are somewhat involved in an advisory role
17%	said they aren't at all involved
7%	said they are completely in charge of the effort

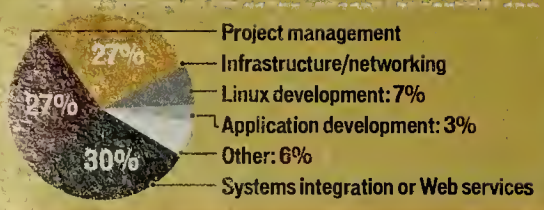
OPEN-SOURCE

When asked about their plans for Linux in 2004:

34%	said they are increasing Linux use with current or additional applications
31%	said they don't use Linux and have no plans to use it
21%	said they are holding steady with current usage levels
7%	said they are replacing Unix, where feasible, with Linux
7%	said they are replacing Windows, where feasible, with Linux

OUTSOURCING AND STAFFING

Those who are hiring in 2004 said they expect to add IT staff in these areas:



When asked about their 2004 IT hiring plans for U.S.-based employees:

44%	said they plan to increase their U.S.-based staff
43%	have no changes in staffing levels planned
13%	said they will decrease their U.S.-based staff

When asked what they currently use offshore outsourcing for:

- 43% said they aren't using offshore outsourcers
- 24% said for new application development
- 18% said for maintenance or support of existing applications
- 6% said for infrastructure work, including network management and systems and database administration
- 5% said for call center operations
- 4% said for business process work

METHODOLOGY: In an exclusive *Computerworld* survey, this year's Premier 100 IT Leaders and conference attendees from IT user companies offered their opinions on the hot issues in the industry. Questions covered a range of topics, including offshore outsourcing, security and regulatory compliance. The respondent base for all questions is 159, unless otherwise noted.

MORE ONLINE For more Premier 100 survey results, visit our Web site: QuickLink a4130 www.computerworld.com

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BRIEFS

Cargill Chooses Dell in $30M Deal

Cargill Inc. last week said it has standardized on Dell Inc. in a $30 million revamp of its IT infrastructure. Following an eight-month assessment, Cargill plans to standardize globally on approximately 30,000 Dell systems in 61 countries over the next three years, said Rita Heise, CIO at the Minneapolis-based food, financial and industrial products conglomerate.

Citrix to Ship New MetaFrame Release

Citrix Systems Inc. last week announced MetaFrame Secure Access Manager Version 2.2. The new release provides mobile users with secure remote access for Microsoft Outlook synchronization and more flexibility in user-interface options, company officials said. It will be available this quarter. Pricing for a 50-user concurrent-license starter system begins at $7,250.

WorldCom's Ebbers Charged With Fraud

Bernard Ebbers, the former CEO of WorldCom Inc., last week was charged with conspiracy and securities fraud in connection with accounting misstatements of $11 billion at his former company. Scott D. Sullivan, WorldCom's former chief financial officer, pleaded guilty to charges in the same indictment and agreed to cooperate with prosecutors, the U.S. Department of Justice said.

Short Takes

PEOPLESOFT INC. said its EnterpriseOne 8.10, due to be released this quarter, will run on RED HAT INC.'s distribution of Linux. . . . GATEWAY INC. said it plans to cut approximately 1,000 employees from its workforce over the next several months. Gateway ended 2003 with 7,500 employees, down from 11,000 at the end of 2002.

Mixing Voice and Data Staffs Can Be Volatile

Clashes hamper efforts to support converged nets

BY MATT HAMBLEN
LAKE BUENA VISTA, FLA.

THE POPULARITY of voice-over-IP systems is growing, but some IT managers are wrestling with the process of merging their voice and data communications staffs, according to attendees at last week's VoiceCon 2004 conference here.

Voice and data staffs historically have been separate within companies, often operating in different units with their own cultures, bosses and physical locations. More than 50 VoiceCon attendees showed up at a birds-of-a-feather session on organizing telecommunications and data communications staffs to support converged networks, and several IT managers testified that trying to unify the two sides can be excruciating.

"Every day I feel like firing somebody," said an IT manager who works at a trucking and transportation conglomerate and asked not to be identified. She said an ongoing blending of the company's voice and data staffs has led to frequent battles among workers over their roles in the combined unit.

Putting voice and data workers together is "a huge culture change," said an IT manager who works at a health care company and also asked to remain anonymous. "You can't just quickly tell a person, 'Here is your new job. Sit down and get started.' "

Training is key, said several conference attendees who have been through the process, including some who said they feel that they have successfully handled the combination of their voice and data staffs.

"It's working out for us," said David Stever, manager of communication technology services at PPL Services Corp., an energy utility in Allentown, Pa. PPL started planning for voice and data convergence about six years ago, so it had time to sort through problems and plan carefully, he said.

As a result of the convergence, 60 employees who formerly were dedicated to either voice or data networks now work together to handle all types of communications needs in three integrated groups: infrastructure and planning, application design and operations. There is also a separate IT department that has about 300 workers who handle data needs not directly related to communications, Stever said.

At SouthTrust Bank, the telephony division initiated a VoIP project in 2000, and voice and data workers were cross-trained to do each other's jobs, said Stanley Adams, group vice president of network services at the Birmingham, Ala.-based bank, which has 700 offices in nine states. The employees now work side by side in operations, engineering and support. "It was a cultural change and it took time, but it increases flexibility," Adams said.

Donald Van Doren, president of Vanguard Communications Corp., a consulting firm in Morris Plains, N.J., said the complexity of combining voice and data staffs is a big concern for some of his clients. "The heritage of data and voice guys is just different," he said. "It's in the DNA."

Van Doren said an organizational structure similar to PPL's is an effective way to start, with staffers assigned to support the network infrastructure, applications or endpoint devices such as phones and PCs. The latter group also can be put in charge of end-user support, he said.
45247

MORE ONLINE
Pure VoIP and systems that mix IP and circuit-switched technologies are both viable, say VoiceCon attendees:
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Sun Plans Per-Citizen Pricing for Governments

BY ROBERT McMILLAN
Taking the per-employee pricing model it introduced last September a great leap forward, Sun Microsystems Inc. last week said it's readying a per-citizen licensing plan for countries using its Java Enterprise System and Java Desktop System software.

Under the new plan, customers such as government agencies and possibly international aid groups would pay one of three per-citizen rates for software licenses annually. The rate would be tied to a country's ranking by the United Nations Department of Economic and Social Affairs, which puts countries into one of three classifications: more developed, less developed and least developed.

> **If someone wants to pirate software, we would rather they pirate ours.**
> STEVE BORCICH, SUN

A government looking to provide e-mail or a Web application to its citizens would pay around 40 cents per citizen in a country classified as "least developed." In a "more developed" country like the U.S., pricing would be closer to $5 per citizen, said Steve Borcich, executive director for Java Enterprise Systems and security marketing at Sun.

The licensing model would also depend on whether a customer buys server or desktop software. The Java Enterprise System — a bundle of Sun's server software products, including its directory, application and portal servers — could be installed only by the government that signed the deal. Therefore a server license purchased by a national government wouldn't cover municipal governments.

Any citizen of the licensed country would have the right to install the Java Desktop System, which includes StarOffice applications and a Linux operating system.

Sun expects to roll out the new licensing plan in time for its JavaOne developer conference in San Francisco in June.

Sun would essentially rely on an honor system to enforce its desktop licenses, said Borcich, who acknowledged that it would be very difficult to control software piracy under the system. "We don't want to advocate piracy, and we'd certainly like to make revenue," he said. "But if someone wants to pirate software, we would rather they pirate ours, and Java in general, than some other competing technology."

Per-citizen licensing is a novel approach to capturing more of the $13.9 billion worldwide government software market, as governments increasingly focus on open-source software, said Rishi Sood, an analyst at Gartner Inc.

"There certainly needs to be a reorientation of how U.S. technology companies can look to [developing] countries and adopt their products and services to meet [those countries'] unique economic circumstances," Sood said.
45242

McMillan writes for the IDG News Service.

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Betty Johnson
Vice President of IT

The NIA Group of Cos., Santa Cruz, CA

Betty Johnson is vice president of Information Technology at The Nonprofits Insurance Alliance (NIA) Group of Companies, which provides liability insurance for 501(c)(3) charitable nonprofit organizations in 17 states and Washington, D.C. To her staff, she's an IT hero.

Her challenge: to design a system that fully integrated the Group's claims and underwriting processes. "We needed to streamline our organizational processes and make it easier for our staff to do their jobs," she says.

Her response was NIAC2000, a modular, fully integrated underwriting and claims processing system. This system's capabilities capture both structured and unstructured data, and its intuitive graphical user interface makes NIAC2000 a pleasure to use. Incorporating all lines of the Group's existing business, NIAC2000 also makes it simple to add other modules, such as finance and marketing.

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Offshoring Debate Continues Amid Backlash

IT decision-makers deal with political, emotional issues

BY PATRICK THIBODEAU
LAS VEGAS

Although the backlash from offshore outsourcing is doing little to slow the accelerating trend, it's increasingly noticeable at conferences attended by managers who make and execute offshoring decisions.

The focus on political and emotional issues associated with offshoring is turning portions of these conferences, such as the Outsourcing Strategies 2004 confab here last week, into a mix of pep talks and gripe sessions. Also, fewer users are willing to appear on conference panels to talk about offshore work, and some are canceling appearances. Deals, once touted by vendors, are often no longer publicly announced.

One IT manager who said he was wrestling with an outsourcing decision raised his hand at a conference session and asked, "How do I justify it to myself?"

The justification is complex. The manager, who asked not to be named, was advised by panelists to ensure that the economics are compelling. And he heard the frequently expressed view that job loss is a fact of life that requires an adaptable workforce. According to that line of thinking, the U.S. sheds thousands of jobs annually for a variety of reasons unrelated to offshore work, such as productivity improvements gained from technology. It's an article of faith at offshore outsourcing conferences that the U.S. economy is dynamic and that innovation will generate jobs.

What's not in dispute is corporate interest in offshoring. The political controversy "is not changing or slowing the impact to our business," said Michel Janssen, a consultant at The Everest Group, a Chicago-based firm that advises buyers of outsourcing services. "The trend is just happening faster and faster."

Strong Emotions

But that doesn't make it easier. "It is emotional for lots of people," said David Elmo, president and chief operating officer of Corbus LLC. "Backlash connotes emotion."

Dayton, Ohio-based Corbus is an outsourcer that does development work in India. But the company says it has an approach to mitigate some of the backlash while delivering savings through a process it calls "microsourcing." The process focuses on select IT functions, particularly where there are backlogs, and not entire departments.

Elmo argues that companies can outsource too much and leave themselves vulnerable to changes in business processes. "I think we have to take responsibility for what's happening, and I think we have to think it through," he said.

Stamford, Conn.-based Gartner Inc. earlier this month said the trend is in fact toward selective sourcing of IT and business processes, characterized by smaller agreements and fewer unwieldy megadeals.

45263

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For more on this topic, visit our Outsourcing Knowledge Center:
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Continued from page 1

Agile IT

dozen attendees at Meta Group Inc.'s Metamorphosis conference here last week.

"It's a lot easier to identify the 'what' than it is the 'how,' " said Salim Nuraney, director of architecture at Ontario Lottery and Gaming Corp., a Toronto-based government agency that runs lottery and casino operations for the province of Ontario.

Meta analysts preached about the need for more IT adaptability and the complexity of achieving it. Nuraney and other conference attendees generally agreed with the consulting firm's contention that IT managers have to do a better job of training their staffs to react to changing business requirements, make their technology cost structures more variable and meld the systems that support individual business units into more cohesive enterprise architectures.

End-User Resistance

Several IT managers at the conference cited resistance by end users to organizational and business process changes as a key impediment. "The last thing end users want to hear is another great idea that came from IT," said Lisa Yeo, CIO for the Multnomah County government in Portland, Ore.

Yeo noted that some county agencies still want to maintain separate systems and IT architectures, despite the efficiencies and cost savings that could be achieved by managing systems under a single architecture. "We're trying to show them how sharing common systems and platforms would help us countywide," she said.

In addition, some attendees said it's hard to ignore demands from revenue-generating business units for specific systems or applications, even if the technology doesn't fit within a wider IT strategy.

Meanwhile, according to a Meta Group survey of 300-plus IT and business managers that's due to be released next month, the biggest barriers cited by the respondents were a lack of staff support and the need to make too many changes to internal business processes.

It can also be tough to align IT with business goals if business unit managers aren't willing to devote enough attention to projects aimed at serving their needs. "Business users still don't want to give up their time and get engaged in projects," said Alex Sinclair, director of client services at the Ottawa-based Canadian Security Intelligence Service, Canada's equivalent to the U.S. Department of Homeland Security.

An applications manager at a large Midwestern manufacturer, who requested anonymity, said he thinks his company's IT department already does a good job of aligning with its business units to understand their needs. But, he added, the only way to become a truly adaptive IT organization as defined by Meta "is that you really need to stop the ship. You can't, so the challenge is trying to do this while the ship is in motion."

That task is further complicated by the fact that many understaffed IT departments are struggling just to manage day-to-day operations, he said.

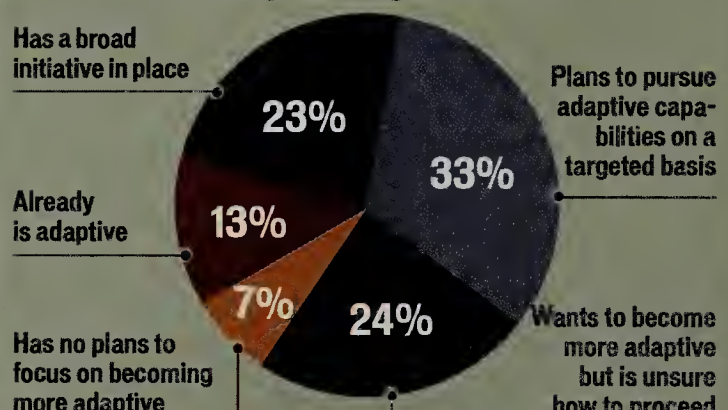
AAA of Northern California plans to become more adaptive by rolling out a suite of IT portfolio management tools from ProSight Inc. to 25 business and IT project managers this month. The system will be extended to another 175 business unit leaders and project coordinators by summer, said San Retna, director of portfolio and program management at the San Francisco-based AAA affiliate.

The portfolio management capabilities are expected to help the IT department anticipate and react to business demands more effectively. "It's like developing the sensors to make your central nervous system work," Retna said.

45244

POLL

Which of the following describes your IT department's plan for becoming an adaptive organization?



BASE: More than 600 IT managers at North American companies, surveyed late last year

SOURCE: META GROUP INC., STAMFORD, CONN.

Correction

The name of Palo Alto Research Center Inc. principal scientist Feng Zhao was misspelled in the March 1 story "Sense This." Also, the information-driven sensory-querying algorithm with which Zhao's team is experimenting would enable sensors to autonomously task themselves to collect and transmit information based on the usefulness of the information. As edited, the story incorrectly stated that the algorithm would enable users to task the sensors to collect and transmit data based on its usefulness.

AGILE COVERAGE

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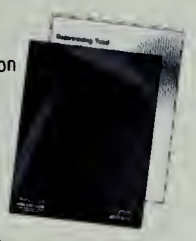

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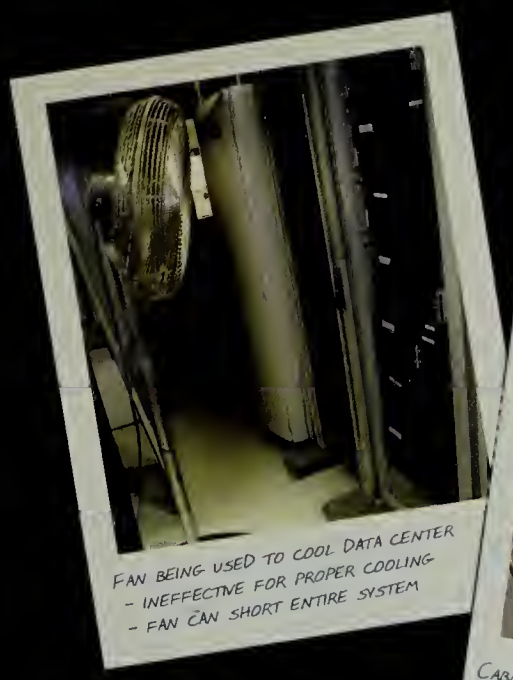

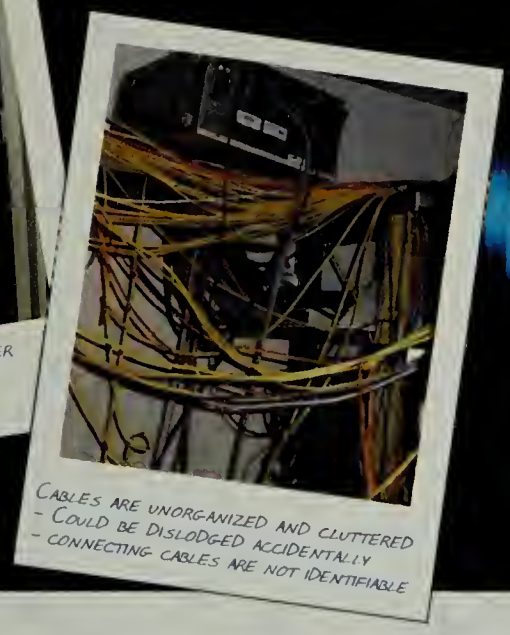

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Fidelity National Revamps IT With Single-Vendor Tack

BY LUCAS MEARIAN

Fidelity National Financial Inc. has undertaken a four-year project to replace its distributed, multivendor computing environment with a centralized infrastructure based on IBM technology.

Jacksonville, Fla.-based Fidelity National said the project, which is costing "tens of millions" of dollars, will enable the company to increase speed and reduce management complexity in its mortgage division, which processes $8 trillion in loans every night for the nation's largest banks.

Joe Nackashi, Fidelity National's chief technology officer, said the existing infrastructure is built around two IBM eServer zSeries 900 mainframes and 800 to 1,000 servers. Those systems run a range of distributed client/server applications, including Microsoft Corp. SQL Server and Oracle Corp. databases. The plan is to consolidate those systems onto three new IBM eServer zSeries 990 T-Rex mainframes running IBM's DB2 database.

The project also involves streamlining Fidelity National's communications with member banks by means of a portal-based system built with IBM's WebSphere middleware and its Rational Unified Process methodology -- a set of software development best practices.

"Clearly, from our perspective, we will need fewer people to manage and develop the environment. So you're going to see a clear ROI," Nackashi said.

> We will need fewer people to manage and develop the environment. So you're going to see a clear ROI.
>
> JOE NACKASHI, CTO, Fidelity National

No Vendor Finger-Pointing

By choosing a single vendor, Nackashi said he's able to move away from "the complexities of a client/server distributed world" and to simplify vendor accountability. "You know how it goes when you have all the vendors doing all the finger-pointing," he said.

Guillermo Kopp, an analyst at TowerGroup in Needham, Mass., said that in the past several years there has been steady growth in the amount of IT dollars financial services companies are spending to replace legacy systems. The driver is cost containment.

In 2004, system revamps will represent $41.8 billion, or 12%, of a total $347.2 billion that financial services companies are expected to invest in IT worldwide, Kopp said. In 2000, by comparison, legacy transformations represented less than 10% of total IT dollars spent by the industry, Kopp said.

For every dollar saved on IT infrastructure, there's $7 to be saved in operational business expenses because many legacy processes are convoluted, require manual intervention and often create errors, Kopp said.

Fidelity's current Cobol-based mortgage processing system has "significant lines of code," which is a challenge to manage when adding functionality, Nackashi said. And although 70% of the system's processes operate in real time, customers are asking for more services-oriented architectures with increased functionality and scalability.

Fidelity's IT revamp follows a trend among the country's largest financial companies to install systems with greater processing capacity to improve transaction performance and cut costs. But not all financial institutions are taking the same approach.

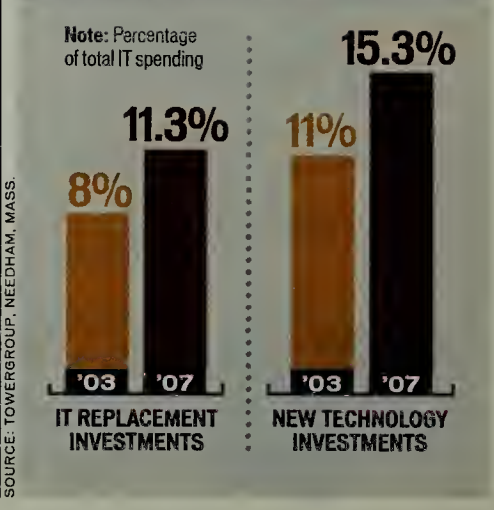
Charles Schwab & Co. in San Francisco went live in December with a Linux-based grid-computing system in an effort to speed up some of its compute-intensive investment management applications.

David Dibble, executive vice president of technology services at Charles Schwab, said he's glad "the last three years are behind us," referring to the financial downturn and the fact that financial services companies are now starting to be able to invest more in IT.

"We're quite good at generating self-funding projects. By deploying Linux across our Schwab.com site, we've been able to save millions, which we've been able to invest back into our infrastructure," Dibble said. "You may have to spend money to save money."

45063

IT Spending by Financial Services Industry



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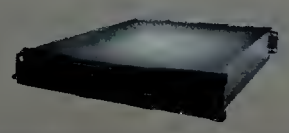

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GAO Faults IT Security at Agriculture Dept.

BY TODD R. WEISS

The U.S. Department of Agriculture has "significant, pervasive information security control weaknesses" stemming from the lack of a fully implemented IT security management program, according to a report from the U.S. General Accounting Office.

The 33-page report [QuickLink a4110 for PDF], released last week, strongly criticizes the USDA for security weaknesses, which potentially leave its proprietary information, payroll and financial transactions, agricultural and marketing data, and other information "at increased risk of unauthorized disclosure, modification or loss, possibly without being detected."

To tighten the agency's IT security, the GAO report recommends that a top-to-bottom security management program be implemented, including improved controls on network boundaries, network access, mainframe access and overall system access management to better show who is using the agency's IT systems.

Unmet Goals

The GAO acknowledged that the USDA has made some progress since 2000, when it recommended that the USDA develop and document a strategy for improving information security. But it was critical of the extent of that progress.

"Agency security personnel have lacked the management involvement needed to effectively implement security programs," while "three agencies [inside the USDA] have not completed any of the required risk assessments" that were laid out for them previously, according to the report. "Security controls have been tested and evaluated for less than half of the department's systems in the past year."

Scott Charbo, CIO at the USDA, couldn't be reached for comment. But in a reply to the GAO, Charbo said that the report "accurately reflects issues and concerns identified by the GAO" and that he concurs with the need to improve the agency's IT security.

Robert Dacey, director of information security issues at the GAO, last week declined to comment further on the document.

The GAO also found that the USDA's network "does not provide a secure operating environment" to support its users. "While USDA established a restrictive policy to protect its agencies' internal networks from the Internet by using firewalls, its current network boundary controls are not configured in accordance with its security policy and do not provide adequate protection," the report stated. 45167

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Domain Registrars Sue ICANN, VeriSign

BY ROBERT McMILLAN

Just a day after being sued by VeriSign Inc. over delays in approving a new service for back-ordering Internet domain names [QuickLink 45059], ICANN, the organization that controls the Internet's Domain Name System, found itself being sued by a group of eight domain-name registrars seeking to stop the new service's implementation. And this time, VeriSign was named as a co-defendant.

The lawsuit, filed Feb. 27 in the U.S. District Court in Los Angeles, seeks to halt the implementation of a VeriSign-backed waiting list for expired domain names called Wait Listing Service (WLS).

The suit accuses VeriSign and the Internet Corporation for Assigned Names and Numbers, the nonprofit organization responsible for allocating IP address space and managing top-level domains, of "planning to implement a scheme to dupe consumers into buying domain names the consumers will never be able to register, and an unlawful and fraudulent protection racket."

Back-Ordered Domains

Popular domain names are often back-ordered and then auctioned when they become available again. According to Bill Mushkin, CEO of Name.-com LLC, one of the registrars behind the lawsuit, while customers may pay a relatively high fee for a back-ordered domain — which, on average, costs $30 to $60 — they pay for the domains only when they actually obtain them.

Under the WLS system, back-ordered domains would be awarded on a first-come, first-served basis, but customers would pay an annual fee to back-order the domain, regardless of whether it became available for purchase during the year, Mushkin said.

ICANN failed to return calls seeking comment by press time.

While VeriSign declined to comment directly on the suit, citing company policy against discussing ongoing litigation, Tom Galvin, VeriSign's vice president of government relations, defended the WLS system, saying it would help remove the uncertainty involved in back-ordering domain names.

Galvin said he hopes WLS could soon be implemented. "We've been working on this service for over two years, and we hope, either in Rome or sometime shortly after that, to reach a solution," he said, referring to ICANN's meetings there this week. 45189

McMillan writes for the IDG News Service.

MARYFRAN JOHNSON

DHS: Dumb, Huge, Slow

IF YOU'VE BEEN AT ALL WORRIED that the Department of Homeland Security might be doing something worth paying attention to, rest easy. When it comes to having any significant impact on corporate IT security plans, the $36 billion federal agency has been monumentally ineffective.

MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran_johnson@computerworld.com.

As our front-page story this week points out, it's private-sector companies — particularly in transportation, utilities and finance — that are driving their own IT security strategies to protect the nation's critical infrastructures. Without any push from the DHS, for example, the Rail Industry Security Committee is busy sharing best practices for both physical and cybersecurity. In the natural gas industry, same story. "All of the initiatives are industry-driven," says Gary Gardner, CIO of the American Gas Association.

Given that the private sector owns and operates 85% of the critical infrastructure that keeps our lights on and water flowing, this may seem like the natural course of events. But at least part of the fantasy behind spending billions of our tax dollars on the DHS was to create an agency that could orchestrate a public/private collaboration on security matters. "I think largely we've dropped the ball," says Richard Clarke, former chairman of the President's Critical Infrastructure Protection Board.

CIOs and senior IT executives would no doubt agree. They've all noticed that there are no incentives in the 1-year-old "National Strategy to Secure Cyber Space" plan for private industry. No tax credits. No cost sharing. No real reason to care.

The companies that do care, however, are computer industry vendors and service providers. They influence DHS strategy and direction through a handful of powerful lobbying groups, the most prominent being the Information Technology Association of America. Their agendas boil down to this: Prevent any new government regulations or reporting requirements that would mandate changes in IT products. So far, mission accomplished.

For its part, the DHS has managed to stay in the headlines with a steady supply of screw-ups. In July 2003, the Homeland Security geniuses signed a deal for $90 million worth of Microsoft software just as yet another critical security flaw in Windows was everywhere in the news [QuickLink 39989]. Around that time, perhaps coincidentally, the status of the cybersecurity job once held by Clarke fell so many rungs down the political ladder that it ended up in cyberobscurity.

Then, last August, a report from the General Accounting Office, the investigative arm of Congress, documented what a pitiful job the DHS was doing in its security information-sharing efforts with state and local authorities [QuickLink 40907]. Not that the DHS wasn't trying. Its newly appointed CIO, Steven Cooper, was quoted last summer giving advice to the fast food industry about how to help raise public awareness [QuickLink 42809]. They could set out cybersecurity pamphlets on their counters, he suggested. (Would you like fries with that?)

The almost comical lack of coordination between the agency and its partners drew the spotlight again in late January, with the announcement of a cyber alert system that elicited a collective "Say what?" from private industry partners who discovered that they weren't in the DHS loop after all [QuickLink 44417].

Just a few weeks ago, the agency's latest brainstorm was a program to persuade the private sector to share vulnerability and security data with the government. (Maybe you'd like fries with that, too.)

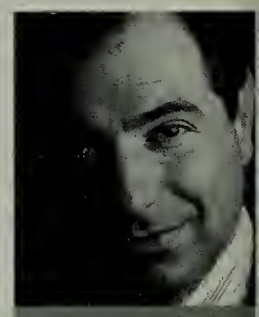
In the meantime, you can safely continue to pay no attention to the little men behind the curtain at the DHS. All they're doing is wasting their time and our money. **45207**

PIMM FOX

Reusable Integration With an SOA

MANY WEB SERVICES are merely APIs wrapped up in some Web interfaces; they can make only single-point connections to legacy systems. They are but a shadow compared with the larger vision embodied in a service-oriented architecture (SOA), which is able to establish reusable components and functionality by using XML [see QuickStudy, QuickLink 44708].

With an SOA, you can look into an XML-based request, open messages on the fly in runtime and check details. For example, if you've got an order entry system that's dumping messages into an SAP back-end system, you can pay attention to discrete parts of the messages to accommodate different business partners. Some of the messages' contents might be routed to specific servers, or orders above a certain dollar amount might be flagged for special handling.



PIMM FOX is a freelance writer in Santa Barbara, Calif. Contact him at pimmfox@pacbell.net

It's this ability to address the details, in combination with an SOA's reusable components, that has drawn the attention of IT experts at Seattle-based health care provider Providence Health System. Recently, Providence was faced with the task of hooking together all of its different systems holding patient records, billing information and insurance data. And of course, each detailed record would have to be sheltered so that the wrong people couldn't gain access to personal information.

But Mike Reagin, Providence's director of R&D, has lots of legacy applications to support and integrate. One of his biggest challenges has been dealing with traditional enterprise application integration suppliers. They've typically called the shots regarding how and when EAI-based transactions would occur, and Reagin has needed developers familiar with

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The Application-Aware Network will have the ability to deploy an application to the appropriate server as well as manage the load balancing across multiple servers to maximize results. When an application is no longer needed, those resources will be made available to other applications. Reliability and business continuity will be achieved by deploying applications across a number of servers and across a number of nodes.

The network will take advantage of new technologies to provide a shared, standards-based infrastructure for deploying, integrating and operating mission-critical applications. Customers will benefit from the economies of scale achieved by leveraging a shared infrastructure and also benefit by only paying for the resources actually used – while knowing that the capacity is available to handle spikes in demand.

HOSSEIN ESLAMBOLCHI, PRESIDENT OF AT&T LABS, AT&T CTO AND AT&T CIO, IS DRIVING THE CREATION OF AT&T'S APPLICATION-AWARE NETWORK, AND IS CONTINUALLY RECEIVING HIGH ACCLAIM FOR HIS NETWORKING VISION OF THE FUTURE. HERE'S WHAT A FEW OTHERS HAVE TO SAY...

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the nuts and bolts of the legacy systems.

"The situation made it difficult to build a patient portal," says Reagin. Now Providence is using an SOA approach for application integration from Cupertino, Calif.-based Infravio Inc. The development platform uses Web services and a library created by developers using Java. The developer creates only what's needed at a particular time rather than trying to connect an entire system.

"The first time we need access to some type of information, we create a call that we can then reuse," says Reagin. Providence is able to manage information in discrete units, so a patient record requested by a doctor is, from an IT perspective, the same as information about diabetes that's pushed to someone whose patient record notes his condition.

This approach is of real benefit. It means that lab results can contain insurance information that should be viewable to a billing department while withholding health data that should be available only to the doctor or another approved health worker.

With the SOA approach, Providence has been able to build components designed to fetch just the information that's needed by a particular person, rather than stapling together legacy systems that remain inflexible. **45043**

DAN GILLMOR

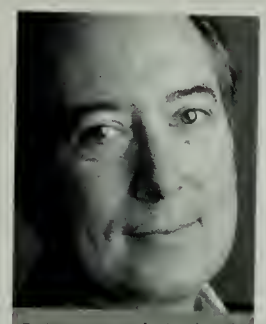
Offshoring And Lowered Expectations

ONE OF THE BEST things about living and working in Silicon Valley is the quality of the people. I'm frequently the least-knowledgeable person in the room, and probably the stupidest. I get to learn from the ultrasmart and creative folks I meet.

So why do I have an uneasy feeling these days about the place, even as an economic recovery for the technology industry starts to gather steam?

One factor abounds with irony. A few years ago, I wondered if the Valley was sowing the seeds of its demise by creating the communications and collaboration tools that would make it much less necessary to be there in a physical sense. The near-unanimous consensus at the time among the top people in the field was that the Valley had nothing to worry about.

I never entirely bought their faith, though the Valley has repeatedly shown an ability to rebound to new heights after deep economic downturns. The recent evidence, notably the surge of offshoring, makes me ask again — about the Valley and the entire nation.



DAN GILLMOR is technology columnist at the *San Jose Mercury News*. Contact him at **dgillmor@sjmercury.com.**

And I wonder if something is genuinely different now.

Intel CEO Craig Barrett put his finger on it a few weeks ago when he stopped by my newspaper for a long chat with some reporters and editors. What's new this time, he told us in a persuasive way, is the nature of the global workforce.

For the first time in human history, Barrett said, a truly gigantic pool of well-educated, technically adept and eager-to-please labor is being created. This pool of talent, which will include hundreds of millions of people in China and India (many of whom speak English fluently), has another characteristic: a willingness to work for a fraction of what Americans expect.

This is not because they like living poorly. It's because local conditions and currency exchange rates make what would seem like a pauper's salary here a highly attractive one there.

The U.S. largely came to grips with a similar crisis in low-end manufacturing. We moved up the value chain as a society, painful as this was for the less-educated, hardworking people who lost middle-class jobs and had to settle for lower-paid service employment.

How high can we move on the value chain now?

I travel widely. One thing I know for sure is that Silicon Valley and the U.S. have no monopoly on brains or energy. We do have an advantage in promoting a culture of risk, of entrepreneurialism. But other places are beginning to adopt even that value, too.

The spectacle of politicians promoting trade wars in the name of stemming job losses is disturbing, if understandable. I wish they'd devote that energy to telling the harder truth: that the U.S. will need to buckle down in unprecedented ways, with vast new investments in education and infrastructure, plus a new commitment to the best aspects of entrepreneurialism.

We may be facing big trouble in the near term, no matter what we do. That's the kind of news few politicians dare deliver.

Barrett, running for no office, offered a hard truth. As he gave his litany of why conditions truly are different this time, we asked if this suggested a generation of lowered expectations in the U.S. "It's tough to come to another conclusion than that," he replied. **45077**

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READERS' LETTERS

Savvy Users Will Drive Linux Adoption

PIMM FOX is right that IBM's Linux ad strategy is a good one ["How Super Bowl Ads Help Linux," QuickLink 44474], but he left out an important reason.

Those of us who remember the Microsoft client/server takeover of IBM's mainframe-centric business-computer market know that it didn't come about as a result of corporate IT strategy. It came about because Windows provided a comfortable and easy-to-use environment in which groundbreaking tools like WordPerfect, Lotus 1-2-3 and dBase could generate real productivity improvements and cost savings, and because the peer-to-peer networking in Windows for Workgroups allowed end users to work quickly and cooperatively with shared data without hassling with the corporate IT red-tape mill. IT's adoption of Microsoft software and the new architecture was really driven by survival instincts.

The point is that adoption was driven from the desktop, not from the boardroom or the IT department. That's why it makes sense to evangelize the masses. That's also why I think Red Hat's recent abdication of the desktop to others was a stunning strategic error. Linux adoption will be heavily driven by techno-savvy end users who understand the philosophical and economic reasons behind open-source. If the desktop comes in a green box, so will the server software.

George H. Yeager
Chief technology officer, Columbus, Ohio

A Loss of Prosperity

IN MACROECONOMIC terms, foreign outsourcing is nothing more than profiteering on the spread between the wages and benefits paid to U.S. workers and the wages of the most desperate and vulnerable people on earth who can be herded into office buildings in Third World economies.

In political terms, foreign outsourcing is the most blatant attack on workers' rights and the most severe threat to the existence of the middle class and the Social Security system in U.S. history.

In sociological terms, foreign outsourcing will result in a dramatic polarization of U.S. society, divided between the massive numbers who will see their livelihoods ruined by outsourcing and the wealthy few who will profit immensely from it.

Great men of the past built a society that is the envy of the world by inventing ways to increase the level of prosperity enjoyed by all. Now a cadre of intellectual and moral midgets has discovered how to profit by strip-mining that hard-won prosperity.

Pardon me and a few others if we don't celebrate their little discovery or if we regard these business experts as cynical, shortsighted, self-serving fools.

John S. Powers
Software engineer, General Dynamics Corp., Fairfax, Va.

Political Shuffling

DAVID MOSCHELLA describes Sen. John Kerry's condemnation of job outsourcing as mere "political rhetoric" ["Political Rhetoric Has Run Amok," QuickLink 44718]. How would he describe the statement by Greg Mankiw, chairman of the White House Council of Economic Advisors, that this practice is good for America? Kerry may merely be making campaign promises, but thousands of laid-off workers can hardly find comfort in insensitive statements from the White House. Moschella seems to ignore that cruel statement by the government, while he criticizes Kerry for defending American workers.

Bassey Essien
Systems administrator, Atlanta

SO SEN. KERRY criticizes loopholes that let "some Benedict Arnold CEO" send jobs overseas. Well, who put those loopholes into the law? I suspect it was the U.S. Congress, in passing more special-interest legislation.

Charles J. Lingo
Denham Springs, La.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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Q&A

A Host's Preparations

The CEO of the largest Web hosting outfit in Europe tells *Computerworld* what technology his company uses to serve its customers and what he thinks a Web hosting company can do for businesses. **Page 30**

FUTURE WATCH

Putting the New in News

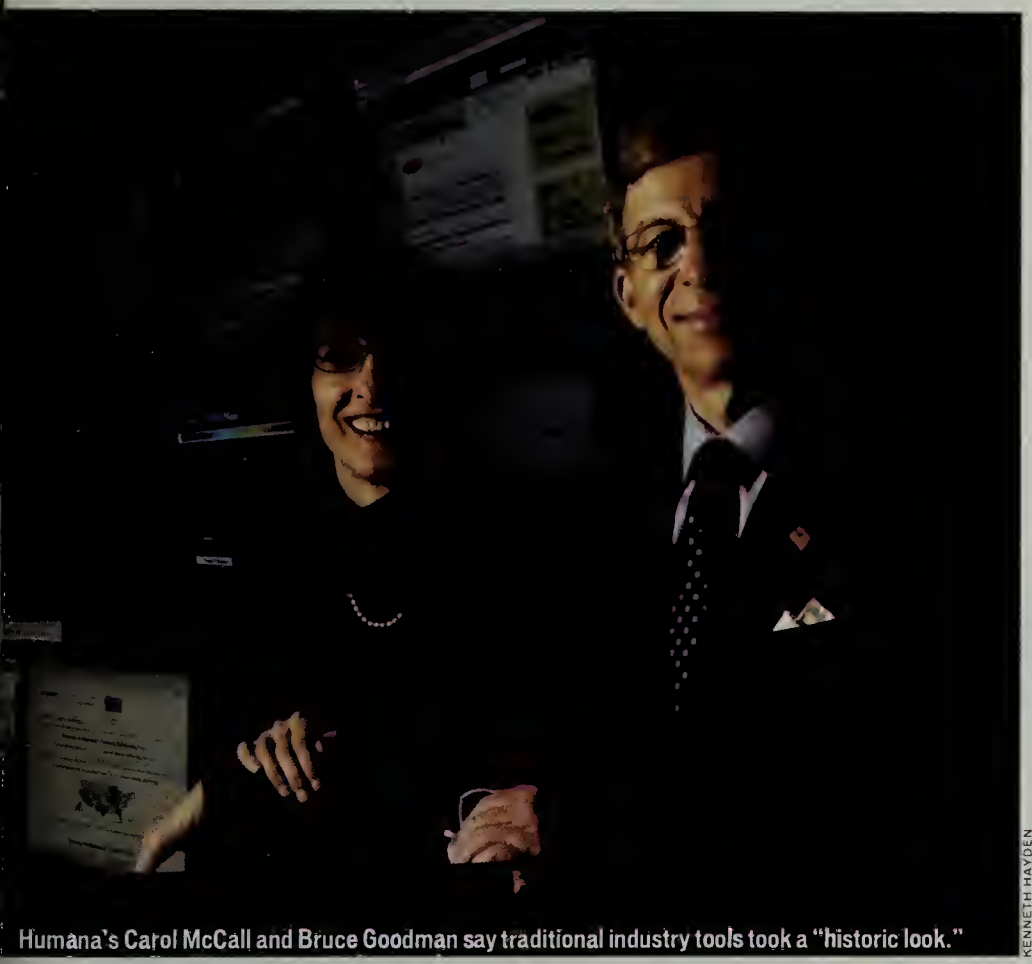
In the future, news delivery will involve interactive multimedia presentations featuring content tailored to the tastes of individual readers. **Page 34**

SECURITY MANAGER'S JOURNAL

This is Your Attacker Calling

Hacker attacks on computer networks get all the attention, but Vince Tuesday finds that social engineering ploys by phone are a more difficult challenge. **Page 36**

HUMANA IS DEVELOPING ADVANCED ANALYTICAL MODELS TO HELP CONTROL COSTS, IMPROVE SERVICE AND IDENTIFY BUSINESS OPPORTUNITIES. BY GARY H. ANTHES



Humana's Carol McCall and Bruce Goodman say traditional industry tools took a "historic look."

KENNETH HAYDEN

HUMANA INC. says it's leading the health benefits industry into a new world in which the focus will shift from employers, doctors and hospitals, where it has been for decades, to consumers. The company says it can better serve its members by giving them greater choice and greater control over their health and health benefits.

But giving consumers choices — and pricing those choices optimally — requires analytic tools of unprecedented sophistication to make sense of terabytes of health care data. Humana is developing such tools and eventually hopes to patent them. Its tools use algorithms developed jointly by epidemiologists, engineers, economists, mathematicians and — literally — rocket scientists.

If consumers are at the top of Humana's strategy pyramid and analytic models are in the middle, then computer technology forms the base. The $13 billion, Louisville, Ky.-based company has put together an IT infrastructure that serves up data to analytic modelers and recycles the results of those models back into a 3.5TB data warehouse. The data store supports a vast array of users, including claims processing and billing personnel; patients' employers, doctors and hospitals; the rocket scientists; personal nurses working from home; and Humana's 6.8 million consumers of medical insurance and medical care.

"The purpose of the industry in the past was generally unlinked to the end user," says Dr. Jack Lord, a physician and Humana's chief innovation officer. "It tended to focus on itself, and on employers acting in sort of a benefactor role to employees. The result was a consumer and public push-back."

FIELD REPORT

OBJECTIVE: To mine and model terabytes of data for insights that boost income, reduce costs and improve the health of Humana's members.

CHALLENGES: Traditional statistical models are inadequate; data floods from heterogeneous legacy systems must be scrubbed and merged.

PAYOFF: Predictive model gives at-risk members heads-up on looming illnesses.

It was a simpler world then, Lord says, one in which health insurance companies managed costs by "supply-side interventions" with employers, doctors and hospitals. Traditional actuarial tools were quite adequate. "You'd say, 'I'm going to forecast tomorrow's weather based on yesterday's.' It was always a historic look," he says. "If you live in that space, you never want to move; but if you stand still, you can never influence the net cost of health care."

Now the name of the game is "choose and use," says Carol McCall, director of the Center for Health Metrics in Humana's Innovation Center. Humana has models to formulate and price health insurance plans. These predict who will

REFOCUSING THE FUTURE

ANALYTIC ENGINES DELIVER INSIGHTS

Humana's insight engines apply analytic models to 3.5TB of customer, claims and other data to identify markets, enhance products and predict costs. The following are the four engines Humana has completed, plus a fifth, SimHealth, that's in development.

SmartStart Plus
GOAL: Predict the consumer's choice of benefit plan; explore benefit/contribution strategies.

APPROACH: Models consumers as "rational agents" that evaluate plans and trade off costs, benefits and risks to pick the best plan.

Predictive Modeling
GOAL: Predict future high-cost (illness-prone) members; improve customer relations.

APPROACH: Combines medical knowledge, engineering methods (asynchronous signal processing, nonlinear dynamic time series) and computer science (learning algorithms, advanced visualization).

Impact Tool
GOAL: Evaluate effectiveness of programs; analyze consumer behavior.

APPROACH: Creates control and test groups on the fly for dynamic analysis of clinical and financial results.

Insight Tool
GOAL: Enhance pricing and underwriting competitiveness; early detection of trends.

APPROACH: Uses historical data and predictions of individuals' future health to identify patterns and drivers of health care costs, including early trend and anomaly detection at the employer, market and provider levels.

SimHealth
GOAL: Simulate consumer choice and behavior via self-evolving models.

APPROACH: In development now. SimHealth uses "rules of the game" (weighted consumer objectives) to evaluate different benefits-plan/consumer scenarios. Evolves using the results of other models, genetic algorithms and agent-based modeling.

choose a given program, how they will use it and what it will cost the company. Humana even has a model that predicts who will become catastrophically ill so it can intervene and try to head off those illnesses. Although Humana has not yet published the results, it says the new model has already shown costs savings for the company while saving money and improving health for the at-risk members.

This year, Humana plans to develop an übermodel, which draws on these predictive and analytic tools, that could send the company in directions it can't at present anticipate. For example, the übermodel could discover a major customer grouping that has been overlooked.

The models do more than simply extrapolate from the past using classical statistical methods such as regression, according to McCall. "There need to be new disciplines around predictive and behavior sciences," she says. Indeed, McCall's group is using complexity theory, agent-based modeling, genetic programming and other "new science" esoterica. It also uses Markov models, Bayesian learning networks and pattern recognition techniques borrowed from military and space programs, in which torrents of data are sluiced for tiny nuggets of information that may be good predictors.

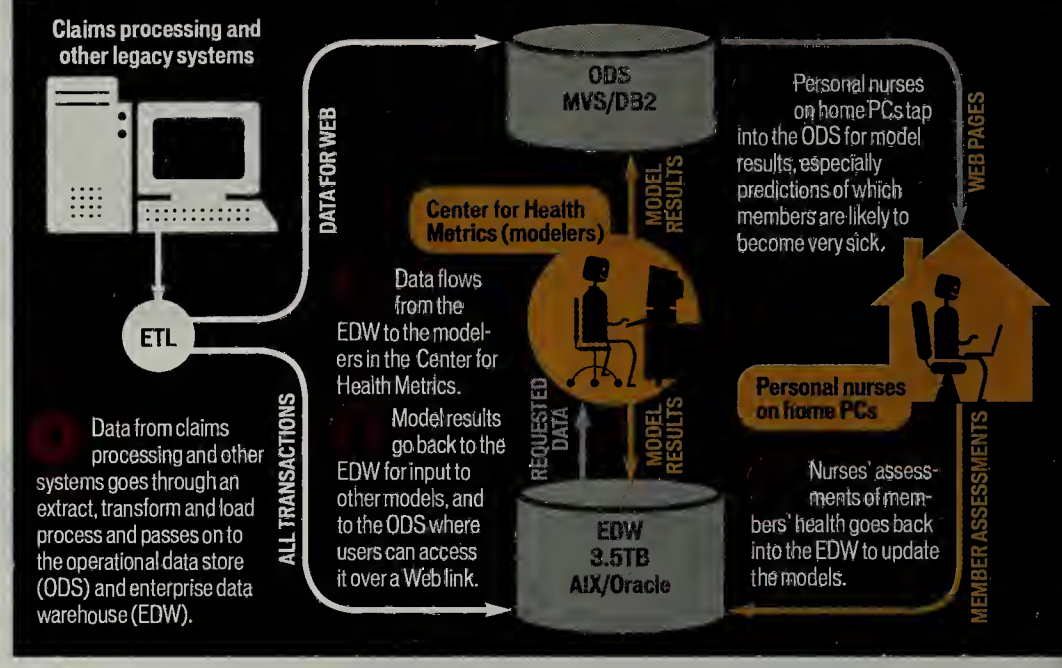
McCall's group has developed four predictive and analytical models that it calls insight engines. This year, it's working on a fifth model, called SimHealth, that will combine results from the other models. Rather than making static predictions, SimHealth will produce scenarios that evolve during the simulation.

"It's one of those things where nobody knows the answer, but they'll know it when they see it," McCall says. "So you want to use what's called interactive evolution. You have a model — it's like SimCity — and you run scenarios. You say, 'I like that scenario,' and you press the big button and evolve it."

Common Vision

Bruce J. Goodman, senior vice president and chief service and information officer, says one of the challenges he faced when he came to Humana five years ago was figuring out how to pull together information from many different stovepipe systems, integrate it and position it for use by a number of constituencies. "We had multiple claims systems and multiple administrative systems, so one of the challenges was, how do you provide a single view for each of the stakeholders?" he says.

INFORMATION FLOWS AT HUMANA



The answer was two huge, integrated data stores, one to feed a Web portal and one for the modeling community. An elaborate extract, transform and load (ETL) process developed to feed the data repositories. "We decided which data elements we needed for the [data stores] and pulled those systems together so we could promote the common view, even though we have disparate systems under the covers," Goodman says. "We were able to make transparent the true underlying complexity of our systems environment."

The operational data store (ODS), an e-business data mart, drives Humana's Web site, a single portal with separate, secure entrances for members, corporate customers, providers, agents, business partners and employees. The MVS-based ODS holds 24 months of data — 1.8TB or 180 million DB2 database rows — about providers, employers, members and their medical and pharmacy claims.

While the ODS is just for Web users, the real information engine at Humana is the AIX- and Oracle-based enterprise data warehouse (EDW), "a complete set of data assets used to run the business," according to Bruce Sterpka, a vice president for corporate information management at Humana. The EDW holds some 3.5TB of data, and the largest of its 432 tables, the table of medical claims, has 430 million rows.

The central IT function at Humana is claims processing, where members seek reimbursement for millions of medical and pharmacy outlays each month. Claims byproducts, which the IT people and modelers call data "exhaust," include diagnostic codes, severity codes and other information that the modelers extract and use to predict illnesses, benefits-plan usage, costs and other variables.

A Cobol job periodically extracts the exhaust data from the EDW for the modelers in Humana's Center for Health Metrics. The models run on two four-processor Windows 2000 Server machines in the center. Results are stored on the modelers' own network-attached storage system before being sent back, via file transfer protocol, to the EDW for recycling into other models and to the ODS for Web access.

Modelers code and test their models using custom C and C++ code and the MATLAB development tools from The MathWorks Inc. in Natick, Mass. The models then go to IT. "Our key step is to take what they've developed and industrialize it, to make it bulletproof and scale it so we can run large amounts of claims information through it," Goodman says.

IT will rewrite the models in Java for production runs, says Ramu Kannan, a director in corporate information management. That will make them more modular and will also make them capable of providing real-time visualization of model output on the Web, he says.

IT has invested $1 million on the modeling work so far and has eight to 10 people supporting it full time, Goodman says. "IT is so well aligned with the business," he says. "We anticipated what we had to do to make the data accessible . . . to enable the business to really take advantage of the technology and move forward." **44722**

OVERWHELMING ETL

When commercial ETL tools couldn't scale to Humana's needs, the company built its own:
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A HOST'S PREPARATIONS

Europe's largest **Web hosting company** rests its business on a solid technology base.

Already the biggest Web hosting company in Europe, 1&1 Internet Ltd., is making a move into the U.S. market. The first step was an audacious program launched in October that offered 1&1's hosting service free to those who signed up within a limited time. The tactic worked in that it garnered the company 150,000 new customers, but it seriously strained 1&1's support resources, according to CEO **Andreas Gauger.**

Q&A

Offering the Karlsruhe, Germany, company's products at an attractive price and establishing its brand are Gauger's current priorities, and he says those efforts must rest on rock-solid technology. The company operates four European data centers with about 22,000 high-end servers running on a Juniper/Cisco network backbone. With a temporary data center New York, 1&1 is building its first U.S. facility this year.

In a conversation with Computerworld's *Tommy Peterson, Gauger explains the technology necessary to provide 99.9% uptime to millions of customers and what he thinks a Web hosting company can do for businesses.*

How many customers do you have worldwide? About 2.8 million for all products. About half of those are Web hosting customers — that's not exact.

That's a lot of customers to serve. What kind of technology do you run? Everything from electricity to fire protection are completely automated processes. Everything is state-of-the-art and very redundant. Even our cooling systems are completely redundant. For the U.S. customers, we're collocated in a U.S. data center that's pretty good too. But we will build or buy our own data center in the U.S. this year.

We have about 20,000 servers running right now in our data centers. We have two parts of the technology. One part is the Linux-based technology, and the other is Microsoft-based products serving the Microsoft base.

We have about 95% of our products based on our Linux technology. We have completely rewritten everything in Linux so it suits our needs as a mass hosting company with thousands of servers.

In eight years, we have developed a base of Linux operating systems, with file systems, with process scheduler — anything that will make one thing happen, give us a very stable, cost-effective system. We use only standard PC hardware. We don't have one big machine for anything — just collections of PCs, thousands of them. On top of that, our own Linux distribution is running that is optimized for massive parallel hosting. On the Microsoft side, we use the newest version of Server 2003, and then we have some additional adjustments and some software we use to make hardware run better — but you know you cannot change too much about Windows. Then we have host Exchange clusters, SQL Server clusters.

To be able to offer what we do at a low price, you have to have systems that run — everything very professional, everything administered 24/7.

ANDREAS GAUGER

Title: CEO

Company: 1&1 Internet Ltd., a subsidiary of United Internet AG

Age: 36

Accomplishments: "Born to be an entrepreneur," Gauger started his first company in high school. He skipped college because, he says, "it takes too much time." After starting several other companies, Gauger has taken 1&1 to the top of the European Web hosting market and is leading the company's campaign into the U.S.

So technology is something you view as key for the company? It's two things. One thing is the technology from the perspective that it should be rock-solid. Price is always an issue with us — if you want to conquer mass markets, you have to have low price. On the other side, we are also very innovative, so the features we include in our Web hosting product in that broad range, I have never seen anything like them from a competitor in the U.S. We offer a very sophisticated Web statistic tool . . . [and] for the price point, there's no other offering like that.

So for the technology you run on, you're looking for dependability and capacity, but for the products and services you offer to the customer, you're getting your edge with innovation? The cost of our hardware is very important to us. We don't buy big Sun machines, we don't buy NetApps filers They are far too expensive. And 90% of the software we use is developed in our shop; it's very cost-effective.

What products and services are you offering now? We are offering a complete range of personal Web hosting products, including domain registration and e-mail options for very low money. And then complete Web hosting plans with very aggressive pricing, up to dedicated servers and e-commerce shopping systems — you can buy everything you need as a small company to open a business on the Internet. Medium-size companies can use our packages, our dedicated servers, for example, to save money and have very good service.

Are you giving companies CRM tools as well or hosting their entire CRM operations? Not yet. So far only the shopping cart and the catalog [are] on the Internet.

So it's basically order and order fulfillment. Are you going to be offering CRM in the future? I don't think it will come in the next month; maybe next year. We are offering some parts of it right now where, for example, we have a new set of tools through which you can send a newsletter to all your customers. And we have tools where you can talk to customers that are on your Web site. But a completely integrated solution, that we don't have right now.

What can you do for large companies? Right now, if they have any small projects, they can do them with us for almost no cost. If you want to try out a new idea about a Web page or anything, you can get it from 1&1, and it's very good quality.

But the other side is that we are offering dedicated servers for very low prices. If a big company is deciding, "Oh, should we host all the servers in our office and drive our own data center or just buy 10 or 50 servers somewhere else?" we are a very cost-effective way to get storage space, servers and security. If you are a software company, you need to have some service for downloads of software over the Internet. You might not be very cost-effective doing it on your own.

So you become a low-cost testbed for companies? If you ask me what we can do for big companies, there's always the need for testing — get something running and see how it works and then maybe stay with us because it's going to run faster with us. On the other side, if you need amounts of servers or bandwidth or domains, what we do is so much less expensive than what other providers can offer. Even if you're able to maintain these services yourself, it might be better to host them than to keep them in your own data center.

How do you handle support issues? On one side, we have FAQs on the Net, or if you write us an e-mail, you also have to go through the FAQ. That's how far our automation goes so far. But if you send an e-mail or if you call us, there are always support staff ready to answer your e-mail or your phone call. They should always be reachable 24/7.

After our promotional free offer, we were a little short [on service representatives], but we are digesting that right now. On the last day of the offer, we had 16,000 up-signs, so that was not easy to handle on the support side. We have 15 people in the U.S. who do support already. In Germany and the U.K., we have 300 to 400 overall.

Are there legal and regulatory issues that you have to deal with? Not at all. There are no rules for Web hosting. **44974**

THE U.S. CHALLENGE

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Our overweight database was months away from crashing due to exceeding our production disk-space capacity.

LARRY CUDA, GLOBAL DATA ARCHIVING AND MIGRATION PROJECT LEADER, KENNAMETAL INC.

CHRIS HARTLOVE

Best practices in database archiving help maintain healthy disk-space capacity and prevent performance problems. **By Drew Robb**

LIKE WAISTLINES, databases almost always grow much larger than their owners ever imagined. Instead of too many carbs, it's a regular diet of stodgy and unnecessary transactional information that leads to database obesity. Serious health problems can result, such as disappearing disk space, poor performance and screaming users upset about slow access rates or queries timing out.

"Our overweight database was months away from crashing due to exceeding our production disk-space capacity," says Larry Cuda, global data archiving and migration project leader at Kennametal Inc. in Latrobe, Pa. "Management determined that we could no longer just keep throwing more disks at the problem."

His SAP database was swelling at a rate of 27GB per month until Kennametal pared it down using eCONtext from Ixos Software AG in Grasbrunn, Germany. Transactions that used to take six seconds now take one, and the company saves an estimated $700,000 annually in terms of hardware acquisition costs alone, according to Cuda. The database maintains a trim 2TB figure, with another terabyte residing in rapid-access archives. The company has an HP-UX 64-bit environment for its SAP ERP applications as well as its Oracle 8.1 database.

With so many competing production demands and differing U.S. and international data retention regulations to consider, archiving database information is never a quick fix. Companies must decide what they should archive, how they should go about it, which tools are available and which best practices apply.

Losing Wait

According to Meta Group Inc., data is growing at a rate of 125% per year, yet up to 80% of this data remains inactive in production systems, where it cripples performance. "To compound this problem, many enterprises are in the midst of compliance initiatives that require the retention of more data for longer periods of time, as well as consolidation projects that result in significant data growth," says Charlie Garry, senior program director at Stamford, Conn.-based Meta Group.

A laundry list of regulations makes any archiving endeavor an extremely complex affair: The Sarbanes-Oxley Act, SEC Rule 17a, the Health Insurance Portability and Accountability Act and a host of other rules have transformed information management into a minefield of potential liability.

The legal ramifications of not having a way to archive information from databases can be grim. But there are also production reasons for formulating and activating an archiving strategy rapidly. Apart from running out of disk space as Kennametal experienced, companies report problems such as

THE Database

total system outages when the database requires too much processing, backup failures when there's too much data to back up in the available window, and transactions timing out as they search through millions of records.

At Southwest Gas Corp. in Las Vegas, inventory tables contained 5 million rows and a human resources table included 60 million rows. "The more data you have in production, the slower the database grows," says Luca Cotrone, a systems analyst at Southwest Gas. "Users complained of queries taking a long time."

Cotrone implemented Applimation Archiver from Applimation Inc. in New York for an Oracle8i database that was growing at a rate of 1GB per month. The database has now stabilized at about 100GB. Archiving of one general-ledger table, for example, saved 18GB. Searches are down from several minutes to a few seconds.

Unlike Kennametal, which sets policies for archive automation, Southwest Gas relies on manual archiving. Each month, a database administrator spends 30 minutes selecting files to archive. The decision is based on the age of the files in the inventory application database. For example, those that are older than 30 months could be moved from the production system to the less expensive Applimation data store. These files can be accessed by the user transparently from the original application.

Tape Not the Answer

Running a bulging database is rarely a desirable option, and in most cases neither is purging onto tape — once a common practice. With purging, recovery must be performed manually and is extremely time-consuming. "Once you purge Oracle, users no longer have access to the data," says Lois Hughes, a senior business systems analyst at Tektronix Inc., a test measurement and monitoring business in Beaverton, Ore. "International finance regulations also meant that legally, purging would have to be paralleled by archiving."

Since the company operates in 27 countries, decisions about what to archive in its 120GB database were very complex. Take the case of accounts receivables, just one of dozens of applications in operation: China requires retention of data for 15 years; Brazil, 10; Italy, seven; and the U.S. only three. On top of language and data-retention issues, the system also had to cope with different character sets for Asia.

Tektronix archives transactional data every three months using LiveArchive from OuterBay Technologies Inc. in Campbell, Calif. First, information is recategorized — reduced in priority within the existing Oracle instance — then it's moved to a less expensive infrastructure. The users, however, are able to access all data from one screen, without headaches.

OuterBay is one of four primary contenders eyeing a piece of the $1 billion archiving market-share pie. According to Gartner Inc., Princeton Softech Inc. in Princeton, N.J., leads the pack with more than 50% of the market. Along with second-place OuterBay, it addresses IBM, Informix Corp., Sybase Inc., Microsoft Corp. and Oracle databases. Applimation focuses on Oracle, while Ixos Software deals exclusively with SAP AG and Siebel Systems Inc.

Archiver Beware

IT managers taking on archiving projects face their fair share of problems. Hughes reports several bugs in Oracle purging functions that had to be addressed, while Cotrone ran into trouble caused by differences between Oracle8i and 9i. His system runs on Oracle8i, but the archive database runs 9i in a Linux server instance within an IBM mainframe. Each successive evolution of Oracle and its associated applications appears to add more complexity that could scuttle a project.

For example, the Oracle 11i E-Business Suite adds 200 new modules and 17,500 tables to the application infrastructure. The same holds true for other database vendors.

"We couldn't export files from our 8i production database into the 9i archive, as there are certain tables you can't send across," says Cotrone. "Fortunately, our inventory application doesn't have these tables, so we were able to archive it while we complete a migration of everything else to 9i."

Kennametal's Cuda reports that he got his project under control only when he moved from a technology-focused view of archiving to a business process/legal approach and after he had plotted out all 223 data objects within his SAP database. This showed him the dependencies that existed among data types and highlighted exactly how to retire data to minimize risk. For example, invoices shouldn't be archived until the corresponding shipping and delivery documentation denotes a closed transaction. SAP, says Cuda, has mechanisms built in that prevent retirement of open transactions.

His advice for any archiving project is to first head for the easy pickings. "Financial documents are striking in that they have no dependencies," says Cuda. "Attacking such low-hanging fruit not only gives you significant data recovery, it also gives your team a sense of victory and [it] highlights to management and users that archiving is beneficial to the system."

ILM Revolution

Not surprisingly, online archiving has become a major element in vendor information life-cycle management strategies. EMC Corp. in Hopkinton, Mass., has partnered with OuterBay to integrate LiveArchive with EMC's ControlCenter storage management tools as part of its ILM suite [QuickLink 43165]. Other vendors are following suit, and the trumpeting about ILM is reaching a fever pitch.

"[ILM] will result in the optimal management of information throughout its life, from creation and use to archiving and disposal," says Mark Lewis, executive vice president for open software at EMC. "It isn't just hype; it's a revolution." Behind the fanfare, EMC talks about a road map to achieving true ILM functionality.

"The ILM buzz is similar to that surrounding virtualization 18 months ago," says Steve Duplessie, an analyst at Enterprise Storage Group Inc. in Milford, Mass. He estimates that it will be at least another 18 months before ILM moves beyond the hype and shows some merit in the real world. Until then, it might be best to evaluate archiving tools on their own merits.

QuickLink 44949

SUCCESS STORY

To find out how one company halted a decline in performance by archiving its Oracle database, visit our Web site:

QuickLink 44963
www.computerworld.com

Database Archiving Advice

1. Achieve corporate and end-user buy-in early in the process.
2. Archive before data volume creates noticeable performance problems or requires unanticipated expenditures for storage or memory.
3. Evaluate the potential effect of your archiving project on business processes. Adopt a business-process and legal view, not a technology-focused approach.
4. Set a data retention policy that's tailored to each country you do business in. Integrate these policies into one archiving system.
5. Archive only data related to closed transactions.
6. Establish service-level agreements with the user community for access to active and inactive transactions.
7. Enforce data retention based on a published central retention document.
8. Retain application transparency for users, regardless of where the data resides.
9. Back up your archive database after you archive.

Diet

PUTTING THE New IN News

STORIES THAT ARE PERSONALIZED, INTERACTIVE AND MULTIMEDIA.

BY LINDA ROSENCRANCE

ISABELLE CARDINAL

FUTURE WATCH

IN THE 2002 MOVIE *Minority Report*, a passenger on a subway train gets constantly updated news on a flexible, translucent, portable flat-panel device that he carries with him.

Although the movie takes place in the year 2054, this vision of the future of news delivery may be closer than we think, says Rich Gordon, a journalism professor at Northwestern University's Medill School of Journalism.

"The buzzword for the future, no matter what platform, is *interactive multimedia*, which both represents user control as well as the multiple forms of media incorporated into a single format," Gordon says.

"I think, inevitably, portable devices are going to have a very different format for storytelling than [via] the Web," he adds.

Small devices such as cell phones and PDAs today display mostly text. But, Gordon says, "we're already seeing a number of the portable platforms developing the capability to take video and Flash stories, and I can envision somebody riding the subway and viewing a video or animation-based story on their PDA." Gordon envisions a handheld device that will display a familiar-looking replica of the print edition of a newspaper or magazine but will be clickable and interactive and incorporate multimedia and video.

"So imagine a *Sports Illustrated*, when you're reading it on your Tablet PC, and you click on the still photo of a close play at the plate, and you'll see the video of the close play . . . and see it actually unfold in front of you," he says.

Total Immersion

New forms of IT and integrated media systems will revolutionize the methods for acquiring, packaging, organizing and delivering the news in the not-too-distant future, says computer science professor Dennis McLeod. McLeod is working on the User-Directed News project at the Integrated Media Systems Center in the University of Southern California's Annenberg School for Communication in Los Angeles.

The UDN project is exploring customized, interactive, multimedia, "immersive" news experiences in which people will, in three to five years, experience news events and stories rather than just read about them, he says.

"Say there's a big protest march by the federal building," McLeod says, "and it happened yesterday, and we have a story package that basically allows the user to go in, look around in different directions and choose what aspects of the event he is most interested in viewing." When delivered via a head-mounted display, this approach allows users to get a sense that they are actually immersed within an ongoing event, and it puts control of the news in the hands of the user, McLeod says.

Immersive news integrates audio, high-definition video, animation, text and haptic technology that conveys a sense of touch, texture and temperature to the user, McLeod says.

"The haptic data technologies engage the sense of touch in the digital world of communication," he says. "For example, a user wears a glove they would use to touch virtual objects, and we try to impart the feeling they would get if they were actually touching the objects."

McLeod says it will also be possible to present a user with a text-based story that's customized to fit that user's stored profile — such as where he lives or what his interests are — and/or his specific requests. For example, a user might request a story on a slam-dunk play by basketball great Michael Jordan. After receiving the request, the system would go to the knowledge base that describes the domain — in this case, sports -- bring up a generic story template about slam-dunk plays and then fill it in with information about slam-dunk plays by Jordan.

Readers Call the Shots

"What will journalism look like in three to five years?" asks Paul Grabowicz, New Media Center director at the University of California, Berkeley. "A combination of audio and video and pictures and animation and graphics and text put together in a way so people can explore a story, where you try to match up the type of media with the best way of telling that story."

Grabowicz says users will enter a story through various entry points, depending on their interests. For instance, one reader might want to focus on the person a story is written about, while another might want to read about the dateline of that story.

"The packaging of a story would certainly have all the elements of multimedia," agrees Nora Paul, director of the University of Minnesota's Institute for New Media Studies. "Some stories are better understood if there are some good visuals to them, or if people want to follow a story more closely, they can connect to different types of supplemental material."

Paul predicts that "animated infographics" will describe a series of events — such as last year's space shuttle accident — that's difficult to understand in a linear text presentation. "With the animated infographics, you could see how the space shuttle spun, how it was supposed to right itself and how it started encountering problems," she says. "And you [could] experience it at your own rate, over and over again."

Paul says that although this technology is currently available, the news media aren't yet using it to any great extent. "Online news has not really evolved much beyond slapping the legacy news story onto the computer screen," she says. "They're trying to push [online journalism] more into the traditional legacy media production-line model rather than the handcrafting that's required for really unique content." **44939**

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This Is Your Attacker Calling

Protecting networks from hackers is easy compared with guarding against social-engineering attacks. By Vince Tuesday

IT'S A NETWORK that connects over 98% of the population. It extends to every country on the planet and occasionally even into outer space. No, it's not the Internet. It's the telephone network. The phone system is a vital part of my company's information infrastructure, but it also offers a nearly perfect venue for attack.

It's possible to spoof your Internet address, but not if you want packets to make their way back to you. In that case, you have to include your real address, and that means everyone between you and your target — and the target itself — can get your address.

On the computer network, our intrusion-detection systems can shift through gigabytes of data every second, plucking out malicious behavior. With attacks by telephone, we don't have any easy way to trace the origin of malicious callers without involving the legal system, and we must rely on our staff to spot and report incidents.

E-mail and Web-based attacks can be automated and launched against thousands of targets. But the phone is the weapon of choice if you have just one target in mind.

Buffer overflows and password-guessing don't work over the phone, so a more devious type of attack is required — one that involves so-called social engineering. In a social-engineering ploy, the attacker tries to trick someone into doing something he wouldn't normally do.

SECURITY MANAGER'S JOURNAL

It might take the form of an appeal from an authority figure. Someone could call and say he needs confidential information for a senior board member. Everyone wants to look good in front of the bosses, so a staffer might provide the requested information without giving it a second thought.

Advertising is a good training ground for picking up approaches to social engineering. We get many callers who try to use peer pressure, dropping the names of colleagues who have supposedly performed a certain action already. If everyone else is doing it, how bad can it be?

A Cry for Help

Some attackers play upon the sympathies of their victims.

One scammer who targeted us claimed that she lost her laptop and needed confidential company information for a presentation she was giving in a few hours. Who couldn't help but feel sorry for someone caught in such a situation? But would you feel enough sympathy to send spreadsheets and organizational charts to her Yahoo e-mail address?

> **Sometimes you have to take a lesson from the attackers' playbook to protect yourself.**

Some tactics are just plain weird. We've had many calls from people who pretend to work for an IT integration company. The company doesn't exist, but people claiming to be its representatives regularly contact our staff to say that they'll be in next week to install cordless mice. The one thing they need before they can do that, however, is the part number of the employee's mouse. "Please turn it over and read out the part number so we can check that you are on the list for the upgrade," the callers request.

Luckily, our employees are a pretty suspicious lot, and despite the customer service training they've received, not one has revealed this information. All have hung up on the attackers or referred the call to the IT help desk.

Many of our lines are recorded for regulatory purposes, so I've had the chance to listen to a lot of calls asking for mouse serial numbers. I can normally construct some scenario that makes sense out of social-engineering calls, but in this case, I don't have the faintest idea why this information might be useful. Perhaps it reveals the hardware we're using. But if that's the objective, wouldn't it be easier to phone up and say, "Is your Dell working today?" I'm almost sorry that our employees cut the calls short before they can get to the next question. Perhaps the mouse information is just an icebreaker and the scammers plan to ask for more sensitive information next.

We've even considered setting up a special number to which staffers could forward such calls. "Oh, I've got to run to a meeting; let me forward you to my assistant who can help," staffers would say. Then my trained staff could take the call and pretend to be helpful while trying to extract information about tactics and motives. It almost doesn't seem fair to use social engineering ourselves, but sometimes you have to take a lesson from the attackers' playbook to protect yourself.

Mydoom Revisited

On another note, we're still working on resolving problems created by the Mydoom virus. That virus didn't get into our systems, but tens of thousands of infected e-mails attempted to do so. Our system stopped them all, only to bombard the intended recipients with alerts for each one [QuickLink 44521].

We provide monthly statistics to our parent company about the number of viruses we stop at our perimeter, and last month we broke the record. Our contacts at headquarters were both impressed and a little shocked. They couldn't imagine what had caused the spike in attempts. I sent them an e-mail explaining that it was due to Mydoom and provided a few Web links with information about the virus.

I was certainly surprised that someone working in security at headquarters could have missed all the fuss surrounding that outbreak, but the reply to my e-mail was even more surprising. It said that the staffers at headquarters had found the links very useful. They learned a lot. They even learned that some messages they hadn't opened were copies of the virus. It looks like my monthly report saved headquarters from a Mydoom infection. I've passed on a recommendation that security awareness be improved, starting with the security group there.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com, or join the discussion in our forum: **QuickLink a1590**

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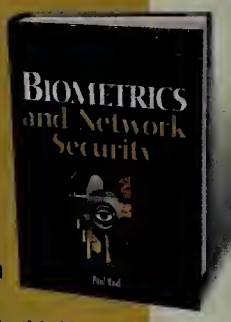
SECURITY LOG

Security Bookshelf

***Biometrics and Network Security*, by Paul Reid; Prentice Hall PTR, 2004.**



The ability to measure a unique biological characteristic of an individual and convert that information into electronic data that can be used to identify him is a powerful thing. The technology to do this is just now on the verge of maturity, says Paul Reid, and his book makes a compelling case that it's time to take biometrics into the corporate mainstream.

In contrast to other books I've seen on this topic, *Biometrics and Network Security* gives detailed examples of how *not* to do biometrics. Reid also summarizes finger, face, voice and iris biometrics and compares them to help readers identify the best option. This is a practical guide, not a book that gets bogged down in theory. I'd recommend it to anyone who's been asked to undertake a biometrics pilot project.

– Vince Tuesday

WLAN Security Software Updated

Vernier Networks Inc. in Mountain View, Calif., has released Vernier Networks Systems 4. The software for managing wireless LAN security runs on the vendor's 6500 series line of WLAN security appliances. Features include a centralized management console; new monitoring, reporting and user rights management capabilities; and the ability to scale to 10,000 users per domain.

Hexamail on Guard

Hexamail Ltd. has released a version of its antispam software that runs on Microsoft Exchange 2000 and 2003 e-mail servers. Hexamail Guard for Exchange filters spam, viruses, Trojans and e-mail scams, according to the Cambridge, England-based vendor.

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BRIEFS

BMC Updates Mainview Line

BMC Software Inc. last month announced several revisions to its Mainview product family for mainframe management. Mainview for IP Version 2.2 provides Internet Protocol pacing technology, which is designed to ensure that mission-critical Internet applications receive priority access to IP bandwidth, according to Houston-based BMC. Pricing starts at $33,000.

Tool Aids Exchange Administration

Aelita Software Corp. has released Aelita Collaboration Services for Exchange. These new tools are designed to make it easier for Exchange administrators to set up secure synchronization of global address lists in companies that use multiple, separate Exchange deployments, according to Dublin, Ohio-based Aelita. Pricing starts at $5 per user.

Unimax Rolls Out Support for Cisco

Unimax Systems Corp. in Minneapolis announced last week that its 2nd Nature software for Cisco's Call Manager IP-PBX and Unity voice-mail systems will be released this month. The 2nd Nature unified system management interface concurrently supports new IP telephony systems such as Cisco's products, as well as legacy PBX and messaging systems. Pricing wasn't available.

VMware Upgrades GSX Virtual Server

VMware Inc. in Palo Alto, Calif., has released an upgrade of its GSX Server 3 virtual server software that allows 3.6GB of memory per virtual machine to support larger applications. It also adds teamed network adapter support, and improved CPU, disk and networking performance, VMware said. Pricing starts at $2,500.

NICHOLAS PETRELEY

Why Free Beer Trumps Free Speech

THE SPIRIT OF OPEN-SOURCE might once have been summed up as "share and share alike." This philosophy has its roots in the GNU General Public License (GPL), which is the license for the Linux kernel (the operating system engine) and most of the core operating system utilities that come with Linux.

The GPL is basically a reciprocal agreement. If you improve or add to a GPL program, or if you build an application that includes software licensed under the GPL, then you must make the source code for your application available, too. Share and share alike. That's not to say you can't sell GPL software; you can. Put simply, the Free Software Foundation promotes the concept of software that is free as in "free speech," not necessarily free as in "free beer." Free means open and unrestricted by pre-existing proprietary claims; it doesn't mean without cost.

NICHOLAS PETRELEY is a consultant and author in Kansas City, Mo., and founding editor of VarLinux.org. He can be reached at nicholas@petreley.com.

According to the most recent Evans Data Corp. survey of Linux developers, however, people are more interested in free beer than they are in free speech.

Given human nature, that shouldn't be surprising, but it runs contrary to the original philosophy of open-source software.

For example, the developers surveyed have a clear preference for software built with the Qt tool kit over the competing tool kit, GTK.

They clearly see the superiority of software built with Qt over software built with GTK. But when asked which tool kit they use to build their own software, the majority chose GTK. While there are alternate explanations for some of this seeming contradiction, other data in the survey suggests this is all about money and licenses.

Here's the crux of the matter: It's illegal to create and sell a proprietary application based on GPL code. Given the reality that people are always going to create proprietary applications, developers invented some license compromises that make it possible to build proprietary applications on open-source foundations. These compromises usually fall into one of two categories I call "quid pro quo" licenses and "free beer" licenses.

Quid pro quo licenses are conditional licenses, often called dual licenses. These licenses have GPL-like conditions for those who want to write free, open-source software, but they require developers to pay a license fee to create for-profit proprietary applications. Qt has such a dual license. Those who use Qt to build proprietary, for-profit applications have to buy developer licenses from Trolltech, the inventors of Qt. But the people who used Qt to build KDE, KDevelop and all the other top-rated software didn't have to pay to use Qt, because KDE, KDevelop and so on are all open-source and free.

Free-beer licenses make it possible to incorporate open-source code into a proprietary for-profit application without any financial obligation.

The widget tool kit GTK is available under the Lesser GPL, meaning you use GTK to build open-source or proprietary applications with no obligation to publish your source code or financially compensate the authors of GTK.

Quid pro quo licenses are ethically consistent. Open-source developers can use the software for free, but they must contribute their work back into the open-source pool of software. Share and share alike the source code. Other developers can use the software for profit, but they must financially compensate the company whose hard work they're leveraging for profit. Share and share alike the profits.

Free-beer licenses, on the other hand, are ethically inconsistent. They enable companies to exploit the hard work of others for profit without giving anything back in the way of source code or money. At most, some of these licenses require developers to include a copyright or otherwise credit the original authors.

So why would anyone work on free-beer software if it amounts to volunteering to be exploited? No doubt the developers of free-beer software like GTK get some gratification from knowing their work is the most frequently chosen, even if the choice has little or nothing to do with the quality of their work. And nobody is compelling them to contribute free-beer software. That's yet another aspect of free: free will. **45159**

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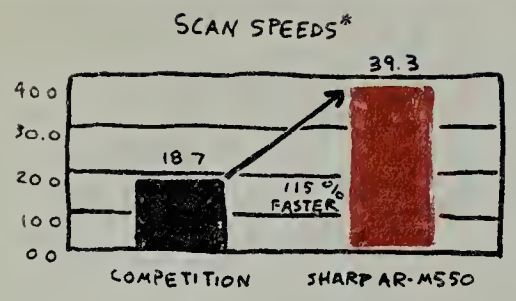

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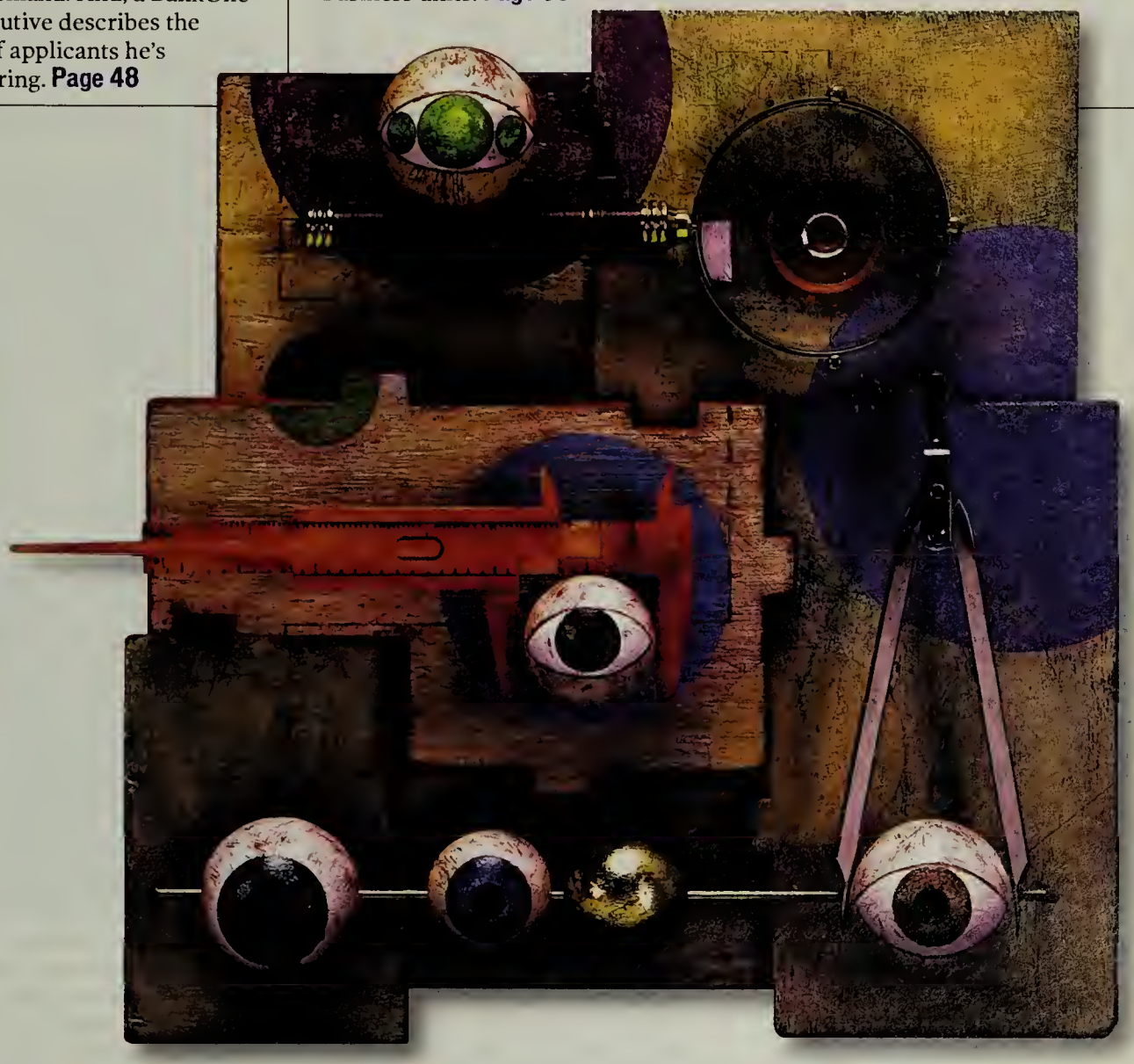
Q&A
Stay Just a Little Bit Longer
Creative and flexible work policies for baby boomers nearing retirement age could head off an impending IT skills shortage, say the authors of a *Harvard Business Review* article. This pool of workers is ready to help fill the gaps. **Page 46**

Career Watch
Robet Half Technology's spring hiring outlook indicates that Windows administration is in great demand. And, a BankOne IT executive describes the types of applicants he's been hiring. **Page 48**

OPINION
The Peanut Butter Syndrome
Bart Perkins says that if you squeeze the central IT budget too hard, you'll force the pent-up IT demand to spill over into the budgets of the business units. **Page 50**



Model Mania

CIOs are faced with a confusing array of quality frameworks. Here's a guide to their strengths and weaknesses. By Gary H. Anthes

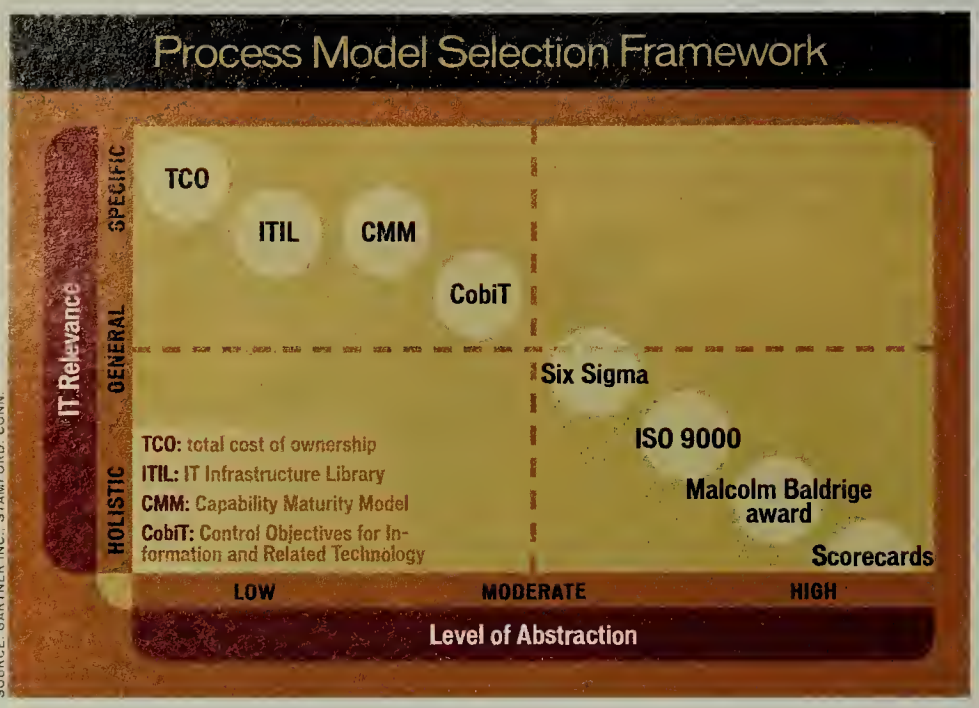
SHOCKED AND AWED by the industrial might of Japan in the 1980s, U.S. companies got religion — the quality religion.

They rushed to improve their business processes by adopting a host of quality frameworks, like ISO 9000 for the enterprise, Six Sigma for the plant and the Capability Maturity Model (CMM) for software engineering.

Today, IT managers have a bewildering array of quality disciplines to choose from. Some, such as Six Sigma, ISO 9000 and the Malcolm Baldrige program, may be dictated to you by your CEO. Others, such as Control Objectives for Information and Related Technology (CobiT), may be imposed by your auditors. And IT-focused disciplines may originate in your own shop, such as CMM for software development and the Information Technology Infrastructure Library (ITIL) for IT operations and services.

While there is some overlap among these quality frameworks, in most cases, they don't conflict. Indeed, most large companies use two or three of them. For example, IBM uses ISO 9000, CMM, ITIL, Six Sigma and sev-

MARIA RENDON



SOURCE: GARTNER INC., STAMFORD, CONN.

eral homegrown quality programs.

Meanwhile, other equally sophisticated companies don't use any of them, preferring to roll their own. For instance, MasterCard International Inc. has adapted parts of a number of programs to its own way of doing business. It underwent an external assessment for CMM a year ago and implemented some ideas from that, but it hasn't adopted the framework formally.

"We have a hybrid of quality programs," says Sheryl Andrasko, vice president for systems development at MasterCard. The program has reduced the development time for new software releases from 18 months to 12 and has reduced the number of software defects as well, she says.

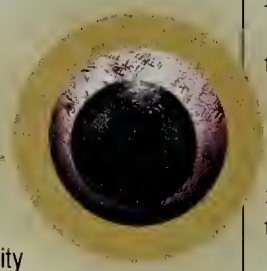
Other companies, such as Nortel Networks Ltd., say the choice should be driven by customers and partners. Nortel uses a telecommunications-oriented version of ISO 9000 because that's what its customers use.

For some companies, an outside body's stamp of approval, such as an ISO 9000 or CMM certification, or the cachet that comes from a Baldrige award, may be an important factor. For example, a defense contractor may not be able to get work without a high CMM assessment. And an ISO 9000 badge may be a requirement for doing business, especially outside the U.S.

But a company can overspend on any of these programs, says Matt Light, an analyst at Gartner Inc. "We have a philosophy called 'just enough process,' " he says. "So to roll your own and apply it just where it makes sense is often the best choice for organizations that don't have certification requirements."

Nevertheless, you should do *something* on the quality front, urges Michael J. Ashworth, CIO of the investment banking unit at J.P. Morgan Chase & Co. "All of these things are just better ways of doing the things that people are trying to do on an ad hoc basis," he says. "They are not mumbo jumbo; they are codified common sense."

Capability Maturity Model Integration (CMMI)



SPONSOR: Software Engineering Institute, Carnegie Mellon University

WHAT IT IS: The CMMI extends and combines the Capability Maturity Model for Software (SW-CMM), the Systems Engineering Capability Model and the Integrated Product Development Capability Maturity Model. SW-CMM is a collection of best practices for software development and maintenance. It allows companies to assess their practices and compare them to those of other companies. The SW-CMM measures process maturity, which progresses through five levels: Level 1 (initial), 2 (managed), 3 (defined), 4 (predictable) and 5 (optimizing).

STRENGTHS: Very detailed. Geared specifically to software development organizations. Focuses on continuous improvement, not just on maintaining a certification. Can be used for self-assessment.

LIMITATIONS: Doesn't address IT operations issues, such as security, change and configuration management, capacity planning, troubleshooting and help desk functions. Sets goals, but doesn't say how to meet them. (For example, CMMI says to do requirements analysis but doesn't say *how* to do requirements analysis.)

For 15 years, companies that wanted to significantly improve their software development practices — and earn a merit badge for all the world to see — embarked on a long, hard road called CMM for Software, a road map that can lead companies from a state of semichaos, where most are today, to one marked by the precision, repeatability and low error rates normally associated with a manufacturing assembly line.

CMMI, recently unveiled by the Software Engineering Institute, is a more comprehensive process-maturity framework that combines SW-CMM with broader disciplines in systems engineering and product development. The institute says it will eventually stop supporting SW-CMM in favor of CMMI.

The IT shop at J.P. Morgan Chase uses SW-CMM, while the company overall works under Six Sigma. "We've got our development teams up to CMM Level 2 and are pushing toward Level 3 in some cases," Ashworth says.

Ashworth says the move from Level 1 to Level 2 brought with it more reliable planning, so application features are more likely to be right the first time, reducing costly rework. The investment bank has seen the following additional benefits, he says:

- A 20% to 25% reduction in post-implementation defects.
- Reduced efforts to support operational systems because they are more reliable. "Emergency" releases to fix bugs have fallen by 60%.
- Better management of globally distributed projects because terminology and specifications are standardized.
- Better performance from suppliers because requirements are better specified.

Nevertheless, Ashworth cautions against "analysis paralysis" when it comes to evaluating the results of CMM. "We found it not useful to spend too much time trying to measure things, rather than just doing it," he says.

Motorola Inc. has software development units at all five SW-CMM levels, but most are at Levels 3 or 4, according to Anthony Carter, director of the Digital Six Sigma program at Schaumburg, Ill.-based Motorola. He says that as groups reach Level 5, they'll migrate to CMMI. The product development framework in CMMI makes it an attractive choice for a company that makes products such as cell phones that contain software, he says.

The IT organization at Capital One Financial Corp. in McLean, Va., is at Level 1 and plans to reach Level 2 by the end of this year and Level 3 by the end of 2005, says Ray Frigo, vice president of IT management services. But unlike, say, a defense contractor that wants to become certified at a high CMM level in order to sell to the Pentagon, Capital One doesn't feel compelled to follow CMM disciplines to the letter.

"We developed a process framework to provide repeatable, consistent delivery," Frigo says. "We are picking and choosing elements of CMM and using CMM scoring to assess where we need to develop processes."

Moving from one maturity level to the next can entail two years or more of hard work, and in some cases, it's not worth the effort, users say. For example, Allstate Insurance Co. wants to move from Level 1 to Level 3 and stop there. "We really don't see the need to go to Level 4 or 5," says Robin Richmond, an assistant vice president at Allstate Protection Technology. "We can see payback from getting to Level 2 and 3. We are hoping for speed to market, efficiencies and improved quality."

And Richmond says she won't migrate to CMMI anytime soon. "It's very difficult to find people with experience in it as assessors or as implementers," she says.

RAISING SOFTWARE QUALITY

Software engineering guru **Watts Humphrey** provides advice on implementing the Capability Maturity Model:

QuickLink 44934
computerworld.com

Control Objectives for Information and Related Technology (CobiT)

SPONSOR: Information Systems Audit and Control Association and the IT Governance Institute

WHAT IT IS: An audit-oriented set of guidelines for IT processes, practices and controls. Geared to risk reduction, focusing on integrity, reliability and security. Addresses four domains: planning and organization, acquisition and implementation, delivery and support, and monitoring. Has six maturity levels, similar to CMM's.

BERND AUERS

Michael J. Ashworth, CIO of the investment banking unit of J.P. Morgan Chase & Co., says, "All of these things are just better ways of doing the things that people are trying to do on an ad hoc basis. They are not mumbo jumbo; they are codified common sense."

STRENGTHS: Good checklists for IT. Enables IT to address risks not explicitly addressed by other frameworks and to pass audits. Can work well with other quality frameworks, especially ITIL.

LIMITATIONS: Says what to do but not how to do it. Doesn't deal directly with software development or IT services. Doesn't provide road map for continuous process improvement.

Lance Turcato, managing director for technology infrastructure and security oversight at Charles Schwab & Co., calls CobiT "an IT governance tool" to help IT managers understand what controls are needed and how to measure the effectiveness of those controls. "There's an audit tool that's part of it, so that auditors can audit against those same criteria," he adds.

CobiT takes considerable effort to integrate into a company's processes. "The statements in CobiT are very generic, so we had to turn it into 'Schwab-speak' so people could understand it," Turcato says. "The biggest challenge was getting everyone to buy into it. What we had to do is determine who are the appropriate people throughout the technology group that own these controls and educate them in CobiT."

Lockheed Martin Corp. has four units at CMMI Level 5. It also uses Six Sigma and ISO 9000 disciplines in various parts of its IT organization, but CobiT is the "umbrella quality framework," says CIO Joseph R. Cleveland. He says it provides useful checklists in each of its four domains.

For example, he says, for something as simple as adding the BlackBerry PDA to the company's catalog of approved devices, CobiT will ask whether there's help desk support for it, whether security has been addressed, whether procedures are in place to acquire and maintain the device and so on.

Cleveland says CobiT fits in nicely with CMMI, with CobiT pinpointing the need for certain controls and CMMI putting them into place. Auditors' questions can often be satisfied by pointing to aspects of CMMI, he says.

IT Infrastructure Library (ITIL)

SPONSOR: The U.K. Office of Government Commerce, Pink Elephant Inc. and others.

WHAT IT IS: Best practices for IT service management and operations (such as service-desk, incident, change, capacity, service-level and security management). Especially popular in Europe.

STRENGTHS: Well established, mature, detailed and focused on IT production and operational quality issues. Can combine with CMMI to cover all of IT.

LIMITATIONS: Doesn't address the development of quality management systems. Not geared to software development processes. Use is highly dependent on interpretation.

While CMM is the de facto quality standard for software development processes, ITIL for many is the tool of choice for the operations and infrastructure side of IT, particularly for IT services.

Capital One rolled out an ITIL program for internal and external customers in 2001 in the wake of very rapid growth accompanied by an increasing number of "service interruptions," says Gregory Gannon, vice president of technology delivery. By 2003, Capital One had reduced "production incidents" — such as system crashes and software-distribution errors — by 30% and had reduced "business-critical" or "Severity 1" incidents by 92%, he says.

ITIL tracks problems in IT service areas such as help desk, applications support, software distribution and customer-contact system support, and it overlaps CMM in certain areas such as configuration management. For example, Gannon says, ITIL tracks the changes made to operational systems, but the quality of those changes — in terms of the number and severity of problems resulting from them — is more a CMM metric.

ITIL facilitates root-cause analysis of problems, Gannon says. "We used to be pretty good at service restoration, but the reason we had to do so much service restoration was because we were restoring service, but not fixing the problem," he adds.

ITIL isn't a substitute for ISO 9000, Gannon says, because ISO 9000 is more relevant to certification of processes. Capital One has some Six Sigma efforts under way, but they're more on the business side of the house than on the IT side, he adds.

Six Sigma

SPONSOR: Developed by Motorola Inc.

WHAT IT IS: A statistical process-improvement method focusing on quality from a customer's or user's point of view. Defines service levels and measures variances from those levels. Projects go through five phases: define, measure, analyze, improve and control. The Design for Six Sigma variant applies this method's principles to the creation of defect-free products or services, rather than the improvement of existing ones.

STRENGTHS: A data-driven approach to finding the root causes of business problems and solving them. Takes into account the cost of quality. In IT, best applied for relatively homogeneous, repeatable activities such as call center or help desk operations. Design for Six Sigma can help develop good software specifications.

LIMITATIONS: Originally designed for manufacturing environments; may be difficult to apply to processes that aren't already well defined and measurable. Can improve a process but doesn't tell you if you have the right process to begin with.

LSI Logic Corp. has been applying Six Sigma for about three years and this year will begin using Design for Six Sigma, a variant it feels is a better fit for IT environments. "Traditional Six Sigma does apply to some areas of software development, like testing. It was developed in a manufacturing environment, where there's a high volume of product," says Terry Gowin, director of quality at Milpitas, Calif.-based LSI Logic Storage Systems. "But software development varies with each project and has much longer cycle times."

Design for Six Sigma is especially powerful early in projects, Gowin says. "A lot of its focus is getting the requirements correct upfront. It helps to really tighten down the specifications, so there aren't surprises later on."

Design for Six Sigma and CMM could complement each other nicely, says Ron Engelbrecht, an operations

Continued on page 45

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What Is Six Sigma, Anyway?

(And, what's wrong with Four Sigma?)

The Greek letter sigma (σ) is the common mathematical abbreviation for "standard deviation," a measure of how widely the outputs from a process vary from the mean. Very consistent (that is, high-quality) processes produce outcomes that are very close to the mean, producing a small sigma. The smaller the sigma, the more values of sigma can fit between the mean and some acceptable, user-specified quality limit. If your programming shop operates at the Four Sigma level, you can be 99.38% certain that your code is "correct," where correct for you means that every million lines of code has 6,210 or fewer errors.

SIGMAS	DEFECTS PER MILLION LINES OF CODE	QUALITY %
1	691,463	31
2	308,538	69
3	66,807	93
4	6,210	99.38
5	233	99.977
6	3.4	99.9997

Software quality expert Watts Humphrey, a Software Engineering Institute fellow, says most commercial software ships with between 1,000 and 8,000 defects per million lines of code, or Four Sigma. He says using SEI quality disciplines will improve that by a factor of 100, on average, to 60 defects per million lines, or Five Sigma.

– Gary H. Anthes

Continued from page 43

general manager at LSI Logic. "CMM is more of an assessment tool and an assessment guide, whereas Design for Six Sigma is a set of tools designed to help you improve your scores, improve your assessments."

At J.P. Morgan Chase, Six Sigma isn't applied directly to IT processes, but it is an essential starting point for most IT projects, Ashworth says. "We look at business processes we wish to improve and do the various steps in Six Sigma to come up with a new business process model. Once you know what it is you are trying to do, that's when CMM comes into play."

Six Sigma could be applied to IT operations and services, he says. The bank is using a homegrown quality framework in that area but is considering using ITIL. "Just as we brought the naming conventions and the assets that are created in Six Sigma and CMM together into a single list that everyone can understand, we'd add ITIL onto that," Ashworth says.

ISO 9000

SPONSOR: International Standards Organization

WHAT IT IS: A set of high-level, customer-oriented, auditable standards (ISO 9000, 9001 and 9004) for quality management systems. Intended to ensure control, repeatability and good documentation of processes (not products).

STRENGTHS: Well established, mature. Enjoys global prestige. Can be applied enterprisewide. Can cover software development and IT operations and services.

LIMITATIONS: Requires considerable adaptation when used in IT organizations. Focuses on repeatability and consistency of processes, not directly on the quality of those processes. Not good for analyzing a process and finding root causes of problems.

LSI Logic has been certified in ISO 9000 since 1992. It also uses Six Sigma and Design for Six Sigma. "But ISO is the broadest quality system that we use," Engelbrecht says. "It applies to manufacturing, engineering, marketing, sales and IT."

Design for Six Sigma focuses on individual projects and tries to fix the problems it spotlights, and it can "make breakthrough improvements," Engelbrecht says. ISO 9000, on the other hand, aims to make broad, incremental, year-to-year quality improvements across IT, he says. These improvements come via annual ISO 9000 audits by both internal and external auditors, he adds.

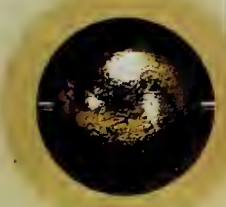
"ISO 9000 requires you to define and document your processes, get them measurable and monitor them for compliance to a quality standard," says LSI's Gowin. "Six Sigma gives you the tools, once you have a process defined, to go in and remove the variation in the process to make the output very consistent."

Nortel Networks Ltd. adheres to TL 9000, a version of ISO 9000 tailored to the telecommunications industry. Its TL 9000 certification applies to the company as a whole, but quality initiatives within IT support the certification, says Chris Ashwood, vice president for product development solutions. "TL 9000 has taken ISO 9000 a step further in really recognizing the importance of IT to the development of products," he says.

In 2002, Motorola's Commercial, Government and Industrial Solutions Sector won the Malcolm Baldrige National Quality Award in the manufacturing category.

The Brampton, Ontario-based company's IT shop has a well-defined set of priorities that's updated every six months, a scorecard for every project and a strict management process for tracking accountability, says Nortel CIO Albert Hitchcock. "That very clearly aligns with the ISO approach — doing what you say you are going to do, tracking accountability and documenting the process," he says.

Malcolm Baldrige National Quality Program



SPONSOR: National Institute of Standards and Technology, U.S. Department of Commerce

WHAT IT IS: A high-level framework for quality in seven areas: company leadership, strategic planning, customer and market focus, information and analysis, human resources, process management and business results. Rates each of these, in terms of approach, execution and results, on a scale from 0 to 100.

STRENGTHS: Very broad, holistic scope. Can be used by any organization. Can sit on top of other, more focused IT quality programs.

LIMITATIONS: Doesn't address process details; doesn't say how to achieve quality. Doesn't directly address IT processes and issues.

Motorola is a big user of CMM, and it invented Six Sigma 20 years ago. But more recently, it has embraced the Baldrige quality program. The company won a Baldrige award in 1988, and in 2002, its Commercial, Government and Industrial Solutions Sector (CGISS) unit won the award in the manufacturing category.

In 1999, CGISS did a self-assessment against the Baldrige criteria and scored just 399 out of 1,000 possible points. "It was a huge opportunity," says Mark Hurlbert, director of business processes in CGISS's Office of Business Excellence. "We established this office to really tie what are the right things to do [in the Baldrige program] with doing them the right way [Six Sigma]."

The company assigned each of the Baldrige domains to a senior manager. For example, process management went to a supply chain manager, customer and market focus went to a sales and marketing manager, and information and analysis went to the CGISS division's CIO. Each of these managers has his own "balanced scorecard" with strategic objectives and annual initiatives to support those objectives. For example, the CIO this year has a strategic objective, "to serve customers better," and a specific project aimed at that: to standardize the tools and databases in call centers.

Having chartered a course via Baldrige, CGISS is using Six Sigma to drive the ship, Hurlbert says. In 2002, CGISS boosted its Baldrige score from 399 to between 650 and 750, more than enough to win the prize. 44933

STAY
JUST A LITTLE BIT LONGER

You could head off a looming IT skills shortage with creative use of retiring baby boomers.

Q&A

The retirement of baby boomers will bring a number of workforce challenges, including a shortage of the kind of IT skills that can't be outsourced. In the March issue of Harvard Business Review, **Tamara Erickson** *and* **Bob Morison** *of The Concours Group, a consulting and research firm in Kingwood, Texas, along with co-author Ken Dychtwald, suggest that there's a pool of workers who are ready, willing and able to fill the gaps. Erickson and Morison explained to Kathleen Melymuka how harnessing this resource will have profound implications for the way we view work.*

TAMARA ERICKSON

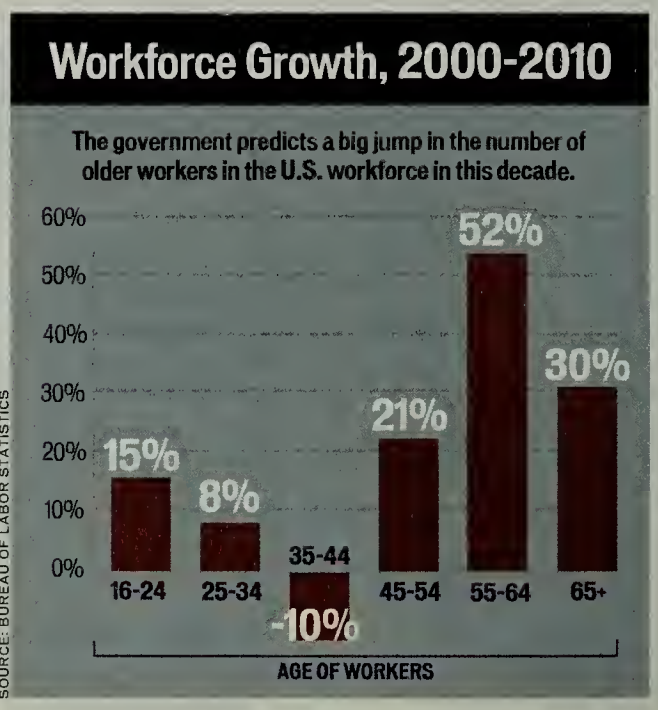
BOB MORISON

You make some startling points about the decline in the rate of U.S. workforce growth. What problem will companies be facing over the next decade or so? ERICKSON: The problem is demographics — the combination of decline in birthrate and baby-boomer bulge. There are not enough younger workers to come in and take their place. **MORISON:** The Bureau of Labor Statistics says that the U.S. will be 10 million workers shy by 2010, but more important, there will be a skills shortage, because if the baby boomers were to retire on schedule and en masse, there aren't enough younger workers up to speed to take their place.

It's hard to believe this will be a problem in the IT world, where so many companies have cut back workforces and outsourced jobs, leaving countless skilled IT workers unemployed. ERICKSON: IT is interesting. It's tough to predict how it will shake out due to immigration — a big variable in looking at any demographic pattern — and outsourcing, which hits the IT sector most particularly. But even there, shortages are still predicted. A recent study of government agencies showed 75% will face shortages of qualified IT staff in the next three to four years. **MORISON:** There are two species of IT workers: those involved in the technology, and those who have to know about the business and how applications are going to support business processes. Those on the more applied side are the ones who tend to be more experienced, and IT organizations are going to see skills gaps as those people leave the workforce. By definition, those jobs can't be outsourced.

What approaches should companies take to recruit and retain the right people over the next few decades? ERICKSON: Make human resource practices more friendly to mature workers. Put in place flexible retirement packages that allow people to phase out rather than drop off a cliff. Look for creative ways to recruit populations other than the young. Structure health care and pension coverage to allow people to phase out in a more gradual way.

IT is a fast-moving, high-pressure, future-oriented, young person's game. Can older people cut the mustard? And even if they can, wouldn't a large cadre of older workers be bad for a company's image? MORISON: If we were to have this discussion five years from now, that might seem a strange question to ask, because companies will have a larger mix of mature employees. We've just passed the historical low point in those over 55 in the workforce. It was just over 10% in the year 2000, and by 2010 it will be 20%. Corporations will learn what Madison Avenue is finally learning. Even Gap jeans ads now feature a generational mix.



ERICKSON: Lots of older people have very strong IT skills. If a company created an image of wanting to tap into those skills, it might skim the cream off the crop and attract a very rich set of capabilities.

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What about workplace rules? Are certain work arrangements more likely to attract older workers? MORISON: Let the location and timing of work be as flexible as is needed to let employees achieve a reasonable work/life balance. That's something that we heard from all age groups. But mature workers, especially those who are retired, can call their own shots. They want to travel and pursue other avocations. So flextime is especially important as a foundation for flexible retirement.

What is flexible retirement? ERICKSON: The basic idea is to give people the ability to avoid that abrupt clifflike departure, to enable them to continue a working relationship for many years past traditional retirement age, whether through contract work or employment that phases into part time over time. **MORISON:** It's a very pragmatic matter: Businesses need skills as the baby boomer generation retires and there are not enough to make up for that brain drain. Many mature people need to work, and others want to because they enjoy the action, but on their own terms and not full time. It's a natural match.

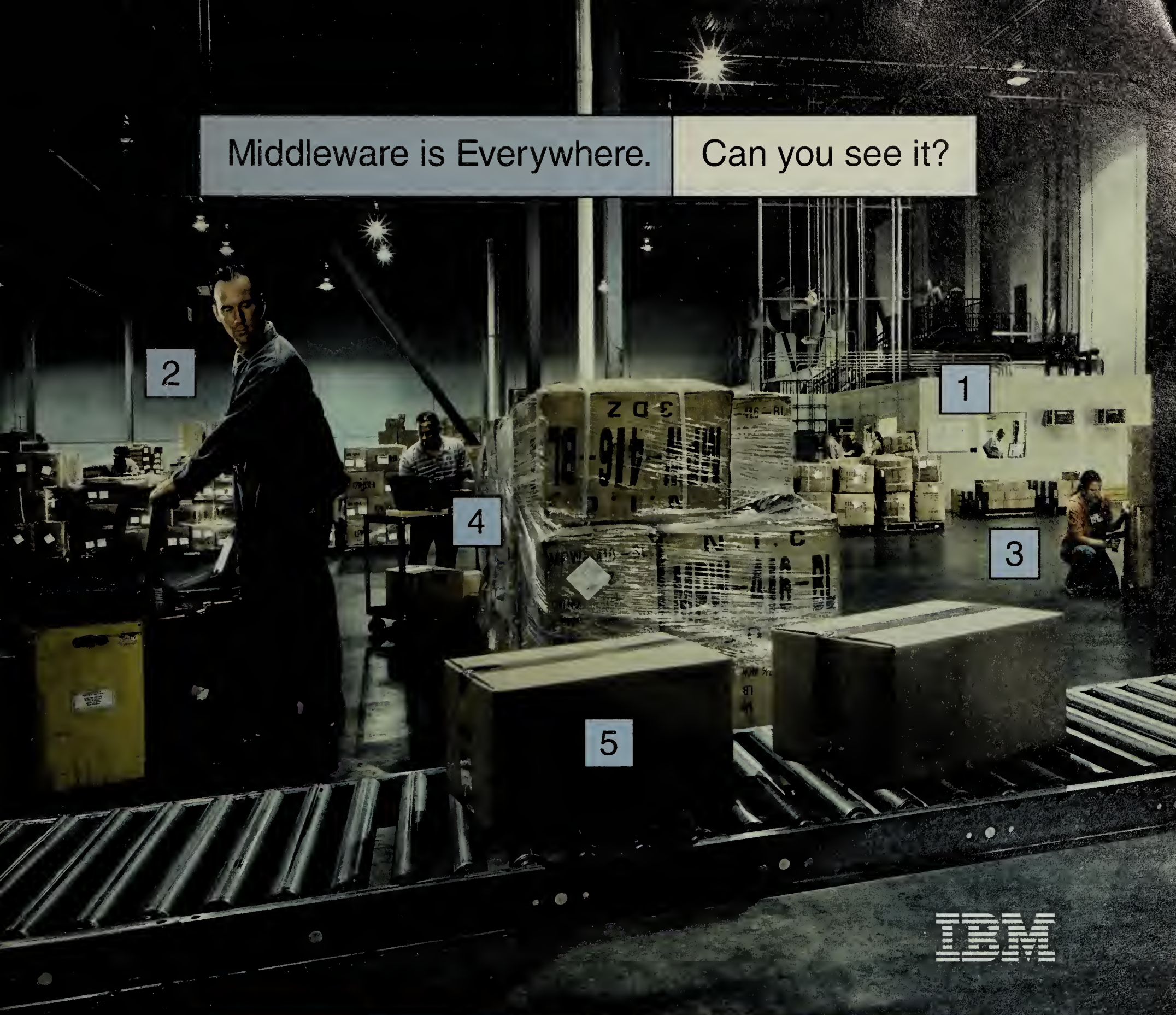
Aren't there problems with health and retirement benefits in this type of arrangement? MORISON: It's a lot easier to bring people back who have already retired than to structure a gradual phase-out. **ERICKSON:** Many retirement plans operate on the concept of some multiple of the last few years you work. Those need to be restructured so people don't pay a penalty for phasing out.

What about the concern that older workers may be burned out – just going through the paces until retirement? ERICKSON: Burnout is both a reality and a myth. There is no question that we're seeing a lot of burnout at the mid-career point. And some of those you *want* to retire. But our research shows that many people are not burned out per se; they're just not engaged. In fact, they're craving more connection. So the question for corporations is how to grab hold of these people and recapture that sense of engagement before they drift off. We think training and learning can have a very important role in that re-engagement process.

Can this approach succeed in an IT setting where workers have to keep their skills sharp and up to date? MORISON: Why not? People often jump on opportunities to learn new things. When retirees return, one of the main motivations is to keep learning. Don't assume that people can't hack it. There is a growing population of skilled workers becoming available, and we should take advantage of them. **44897**

Melymuka is a Computerworld *contributing writer. She can be reached at kmelymuka@yahoo.com.*

This is the latest in a series of monthly discussions with Harvard Business Review authors on topics of interest to IT managers.



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Career Watch

James Ditmore

Q&A

Title: Chief technology officer, infrastructure and operations

Company: BankOne Corp., Chicago

What he does: Ditmore joined BankOne in 2001, the year the $270 billion bank holding company adopted its ongoing IT insourcing strategy, after jettisoning a $1.4 billion outsourcing deal with AT&T Corp. and IBM. In the past two years, BankOne has hired more than 2,100 IT professionals, at a time its competitors were reducing head count and/or sending IT jobs offshore. Ditmore, formerly CIO at Ameritrade Holding Corp., hired many of these new IT employees into his group.

What specific IT skills have you been hiring? Where is your greatest need for IT professionals? We've been hiring IT skills pretty much across the board, with a large number of individuals hired into infrastructure and operations. I would say the greatest need has been application development, specifically people with [IBM] WebSphere, database and Internet development skills.

Experts say business-specific knowledge makes an IT professional all the more valuable. What can workers in IT do to learn more about the company's operations outside of IT? If you [support] a brokerage, for example, there are a number of certifications you can get. You can also become a certified financial planner. There's a lot of [financial services] industry-specific training available at local community colleges and through industry associations.

What, in your opinion, are the kinds of jobs most likely to be outsourced? Application maintenance.

What are the jobs least likely to be outsourced? Unix administration, because the servers are here in the U.S. It's not absolutely necessary, but you typically have your Unix engineers where your servers are. These servers aren't likely to move offshore because then you run into significantly more risk and more regulatory issues, and you introduce application latency that you might not otherwise have.

– Julia King

Where the IT Jobs Are: Spring 2004 Hiring Outlook

Of more than 1,400 CIOs surveyed across all industries, 11% plan to hire IT personnel and 2% plan to decrease current IT staff during the second quarter. CIOs in the retail sector are the most optimistic, with 17% of them expecting to hire and 2% planning to cut IT staff. The 15% net increase is six percentage points above the national average for all industries.

	INCREASE	DECREASE
Manufacturing	7%	
Professional services	12%	
Retail	17%	
Wholesale	5%	
Finance, insurance and real estate	11%	
Business services	14%	
Transportation	8%	
Construction	13%	

Skills in Demand

Windows administration (NT/ 2000/XP)	79%
SQL Server administration	39%
Cisco network administration	34%
CheckPoint FireWall administration	26%
Visual Basic development	25%
Active Server Page development	21%
.Net development	17%
Linux administration	15%

SOURCE: ROBERT HALF TECHNOLOGY INC., MENLO PARK, CALIF.

Numbers Crunch

15% | 14%

56% | 38%

SOURCE: CULPEPPER AND ASSOCIATES INC., ALPHARETTA, GA.

Passport to Advanced IT Training

METLIFE INC., Allstate Corp. and Citigroup Inc.'s Citi Card unit are among the U.S. companies earmarked to receive federal dollars to provide high-level training to U.S. workers for IT jobs now held by foreign workers employed in the U.S. under H-1B visas. Under a $6 million grant, which will be administered by the Computing Technology Industry Association, a global trade association, more than 2,600 American IT workers in 12 states will receive advanced IT job training in the coming months. Allstate will train 907 incumbent IT workers in Illinois, Ohio and Texas in systems administration, programming and Web applications. MetLife will train 600 Web designers, Web developers, network architects and application developers — all jobs that have been typically filled by H-1B workers, according to the company. To learn more about the H-1B training grants, which are supported by user fees paid by employers who hire IT professionals under the H-1B visa program, go to *www.doleta.gov.* **44944**

— Julia King

IBM

KEY

1. **Instantly admitting patient.**
2. **Immediately processing claim.**
3. **Automatically approving procedure.**
4. **Constantly tracking treatment.**
5. **Directly assessing costs.**

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BRIEFS

A.G. Edwards Cuts 138 IT Staffers

St. Louis-based securities brokerage A.G. Edwards & Sons Inc. recently announced that it's cutting about 138 workers from its IT department. Approximately 100 of those employees will be hired by Kanbay Inc., a Rosemont, Ill.-based IT services firm that's helping A.G. Edwards upgrade its securities processing and IT systems. Another 38 IT employees accepted severance packages. About 1,200 IT professionals will remain employed at A.G. Edwards' St. Louis headquarters.

Supervalu Revises Data Warehouse

Supervalu Inc., a major U.S. grocery chain based in Eden Prairie, Minn., recently upgraded its data warehouse to consolidate multiple account-reporting and category management systems into a single source of information, so business users will have information to quickly respond to market changes. The data warehouse, from Teradata, a Dayton, Ohio-based unit of NCR Corp., helps managers make real-time decisions on product assortment, pricing, merchandising and promotions based on the potential effect on sales or profit.

Bank Awards AT&T Voice/Data Pact

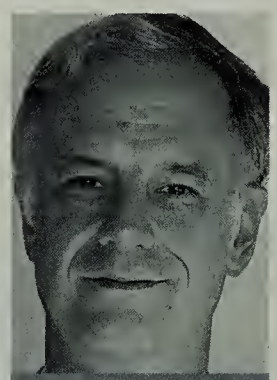
New York Community Bank recently awarded AT&T Corp. an $8.6 million contract for local and long-distance voice and data services that will create a WAN linking 139 branches. AT&T will also provide high-speed Internet connectivity. The Westbury, N.Y.-based bank said it expects the network to provide smoother teller transactions, faster loan processing and approvals, and improved branch-to-branch communications. New York Community Bank estimates that under the contract, it will save more than $2 million over the next four years.

BART PERKINS

The Peanut Butter Syndrome

THE RECESSION HAS FORCED most IT organizations to cut their budgets, projects and staffs. Companies often believe that by putting all IT expenses into a single budget and squeezing that budget hard enough, they can force total IT expenditures down to some arbitrarily predetermined level. But IT's purpose is to enhance business productivity. If the central IT budget is overly constrained, the business units will bury IT costs in their own budgets.

The result is the "peanut butter syndrome." If you hold a lump of peanut butter in your hands and squeeze it hard enough, eventually some of the peanut butter will squish out between your fingers. Similarly, when the central IT budget is squeezed too tightly, IT spending will spill into other budgets.



BART PERKINS is a managing partner at Leverage Partners Inc. in Louisville, Ky., which helps CIOs manage their IT suppliers. He was CIO at Tricon Global Restaurants Inc. and Dole Food Co. Contact him at BartPerkins@LeveragePartners.com.

Many business units still have unique IT needs that must be met in order to improve business results. Unfortunately, as a result of the retrenching of the past few years, the CIO often doesn't have the staff or budget to fulfill those needs, and many business units no longer view central IT as their partner. As the economy grows and business units have more discretionary dollars, peanut butter IT will expand. Business units are doing end runs around the central IT organization, buying hardware as "plant and equipment," and hiring IT consultants and technical staffers as "analysts." Meanwhile, architectural standards are compromised, the total cost of IT is underreported, and the perception of IT's usefulness is undermined.

In most organizations, it's unrealistic to expect to be totally peanut-butter-free. But peanut butter is sticky, messy and hard to remove. Help prevent the spread of peanut butter syndrome by taking the following steps:

■ **Understand the business units' challenges.** Even if you don't have the budget to start new development projects, you need to understand each business unit's problems and help it get the IT support it needs. If possible, help the unit build a business case. In the process, you may jointly discover a way to meet its needs through an existing system. In any event, the business case will help it more clearly articulate its needs, as well as identify any reengineering required to make the new system successful.

■ **Help the business units creatively transform peanut butter projects into official projects.** One of my firm's clients had to lay off IT staff when her development budget was severely cut. Six months later, a business unit created a compelling business case for a new project. Although the CIO agreed that it was desirable, she didn't have enough staff to undertake the project. Working with the business unit, she selected a systems integration firm that had successfully worked with IT before — with the explicit understanding that the firm would follow IT's architectural standards. The CIO also assigned an architect and a project manager from her staff to oversee the project. The business unit paid for the project and got the desired software. The CIO was able to select a preferred vendor, maintain architectural integrity and win the business unit's gratitude.

■ **Detect peanut butter projects before a vendor is chosen.** Ask your vendors to tell you about any potential peanut butter projects. (They often hear about them before you do.) In return, encourage business units to use existing strategic vendors in order to preserve architectural integrity.

■ **Integrate the IT chart of accounts into the corporate chart of accounts.** Few organizations make IT expenditures explicit in their COAs, which makes it easy for business units to bury IT spending in "analysis" or other projects. If spending gets diffused throughout the organization, it becomes much harder to aggregate IT spending and negotiate with vendors the next time you need price concessions. Vendors negotiate on quantity purchased, regardless of whether the dollars come from IT or elsewhere.

The peanut butter syndrome has become increasingly prevalent over the past few years. As it grows, it compromises the integrity of your architecture, undermines your negotiating power, marginalizes the central IT organization and makes effective supplier management nearly impossible. Controlling the peanut butter syndrome gives you leverage over total IT spending and protects your architecture, while building bridges between the IT organization and the business units and your vendors. **44892**

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Got a storage solution so good it's worthy of an award?

Nominate it for the Storage Networking World "Best Practices in Storage Awards Program!"

Computerworld, in conjunction with the Storage Networking Industry Association (SNIA) and Storage Networking World (SNW), is seeking IT user-organization case study submissions for consideration and recognition.

This program will evaluate, select and recognize ten Storage Technology "Best Practices" based on case studies highlighting successful or noteworthy solution implementation projects and deployments in the following categories:

- **Systems Implementation**
- **Storage Reliability and Data Recovery**
- **Data Lifecycle Management**
- **Industry Regulation Compliance and Corporate Governance**
- **Innovation and Promise**

Nominations are welcomed from IT Users/Implementers; Systems Integrators/Consultants; IT vendors on behalf of customers, or, their own In-House Deployment; and PR firms on behalf of clients. Multiple submissions of case studies describing different deployments per company/organization will be considered.

Winners will be featured in a Computerworld special advertising supplement profiling the company and submitted case study.

Submit your nomination today! The deadline is Tuesday, March 9th at 9:00pm Eastern time.
Complete the nomination form at: snwusa.com/best_practice_storage.html

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Project Manager: Duties include: Plan, direct, and coordinate activities of complex web application projects for both in-house systems and outfacing e-commerce marketing and business applications. PM will identify business targets and opportunities for insurance products and financial services; design and coordinate development of web applications for target markets; and maintain, troubleshoot and enhance existing business web applications. PM will use strong understanding of business operations management, financial and marketing communications theory along with a working knowledge of computer systems design, web based applications development, programming tools to develop e-commerce solutions for financial and insurance products. Daily duties may include: review and formulate systems scope and project objectives; identify role and function of each team member; effectively coordinate the activities of the team and project; identifying appropriate resource required; communicate and consult with programmers, systems analyst, database developers; create and review status reports; coordinate project activities with activities of government regulatory or other governmental agencies where required. Min. Reqt's: BS/BA (foreign equivalent accepted) in Business, Marketing, Operations Management or MIS and 2 yrs experience in job offered or a related occupation (i.e. e-commerce project management or marketing communications experience). MUST also possess: (1) Demonstrated experience with Marketing communications projects involving insurance and financial services and products; (2) Strong working knowledge of general computer systems design, web application design, database structure, and programming; and (3) Demonstrated knowledge and experience using marketing, finance and iterative project management methodologies and concepts for developing e-commerce web applications. Basic pay is $80,404 per year FT and standard company benefits. EEO. Submit 2 resumes and respond to Case No. 2002-03499, Division of Career Services, Alien Labor Certification Unit, 19 Staniford Street, 1st Floor, Boston, MA 02114.

IS SYS. STAFF ANALYST

Apply knowledge of Siebel prog. techniques & comp. sys. to plan, dvlp, test, implement & document comp. progs. Eval. user requests for new or modified progs. Make site visits to gather info. & analyze sys. reqmnts. Consult w/users to identify operating procedures, clarify program objectives & leverage functionality of Siebel software to address critical reqmnts. Apply knowledge of industry best-practices while configuring the Siebel software & dsgng enhancements to optimize processes. Utilize all components of Siebel dvlpmnt environment to combine pre-dvlpd software objects with customized programming to generate applns that are highly integrated with Siebel sys. Oversee installation of hardware & software. Train & provide tech. support to users of Siebel prog. Monitor performance of sys. after installation. Carry out programming, debugging & troubleshooting, as well as complete description code of IDOC & BAPI Excel based on SAP R/3. Master's deg. in Project, Constr. or IS Mgmt or Comp. Sci. reqd + 2 yrs exp. in position offered or in Comp. Sci., Bus., Constr. Mgmt or Math. Must have exp. converting applns to SAP R/3 software (incl. CO, HR, PP, PI, MM & SD modules) utilizing Oracle, ABAP/4, BAPI Excel & Siebel 7/2000 computer tools). High mobility preferred. 40 hrs/wk, OT as reqd, 8am - 5pm, $68,000/yr. Qualified applicants submit resumes to: Fayette County CareerLink, Attn: CareerLink Program Supervisor, 135 Waylan Smith Drive, Uniontown, PA 15401. Please refer to Job Order No. 396465.

PM software projs. - Java, C++, VB, ASP, PB, Oracle, Sybase. Utilize RUP. Critique codes in J2EE (EJB, JMS, JNDI), & OOAD. Full life cycle dev.: system anal., concept, design, prototype, document, impiement, coordinate, plan, code, test, budget & estimate. Create/maint. proj. plan of tasks/ schedule. Interface w/ client, updates, & channel all new reqs./ change requests to develop. team. Budget ctrl., bills & collection. Present resource issues, perf., client concerns & status to internal mgmt. Get client's b/z needs, build prof. relationships, & new sales. Comply w/ SEI CMM Level 5 QA guide. BS in Comp. Apps + 5 yrs. exp. in job duties + 3 yrs. QA exp. in SEI CMM level 5. Comp. salary. Apply: Core Concept, 1000 Abernathy Rd., #1010, Atlanta, GA 30328 with proof of perm. Work authzn.

SOFTWARE ENGINEER to provide on-site consultancy in design, development, customization, testing and maintenance of e-commerce web-enabled applications software using .Net, CSharp, ASP, ADO.Net, ActiveX, COM/DCOM, HTML/DHTML, XML, MTS, IIS, PL/SQL, Rational Rose, VB and related technologies; provide software support on Windows 2000, Internet Information Server, Oracle and SQL Server. Require: Bachelor (or equivalent) in Management Information Systems/Computer Science with five years experience in the job offered or any experience providing skills in described duties. 40% travel required to client sites within the United States. Salary: $65,000 per year, 40-hour/week, 9 am to 5:30 pm, M-F. Apply with resume to: President, K2 Technologies, Inc., 2107 Franklin Drive, Papillion, NE 68133.

Software Engineer: Design, code, customize & integrate s/w components into wireless products. Design & develop application level s/w for Bluetooth profiles, IrDA, USB connectivity modules using C, C++. Develop applications that communicate with non-PC network products such as digital handsets, PDAs and commercial test equipment. Bach's deg in Comp Sci, Physics or Elec Engrg reqd + 1 yr exp in job offered. Send resume to Panasonic Mobile, 1225 Northbrook Parkway, Suite 2-330, Suwanee, GA 30024, Attn: Debbie Greer, PL.

Programmer Analysts - Design, Develop and Maintain Enterprise, Web, and Portal applications in Java and/or VB Database Administrators - Oracle DBA activities, logical/physical design of database.
Software Engineers - Prepare report design, functional, program specifications & deploy using Brio Enterprise Server 6.5 and ETL development.Min Edu-Bachelor's Degree or equi, Min Exp-2 yrs. Job may involve working at various locations throughout the US. Please send resumes to Attn: HR, Tekessence Inc . 1001 Office Park Road, Suite#107 West Des Moines, IOWA 50265

Turing Consultants, Palantine, IL based IT company has multiple openings for exp'd Computer Professionals w/relevant educ. & exp. to analyze, devip, sprt, test, maintain IT projects w/following skills: VB, VB Script, Perl, Erwin, COBOL. PL/SQL, C, C++, VC++, i Planet, ASP. Web techn.: HTML, DHTML, XML, UML, Websphere, Weblogic, E-business intelligence, GUI tools, ORACLE-RDBMS, ASP, JAVA Technologies, (JDBC, J2EE, EJB, Java Script). Operating systems: Sun Solaris, Unix, Linux, Rational Rose, Crystal Reports, PowerBuilder. Offering top $$+bnfts. 40% travelling to client sites req'd. Resumes to: 1024 N, Cardinal Drive, Palantine, IL 60074.

Computer Programmer Analyst

Full time position to work as Computer Programmer Analyst, needs knowledge of Business Intelligence tools (Brio, Business Objects, Cognos), data warehousing and data mining concepts, Enterprise reporting, experience in Customer relationship management, Siebel, proficiency in programming, SQR, Java, PL/SQL, C ++ and familiarity with one of the relational databases Oracle or Sybase, automated testing tools like mercury/rational. Requires Bachelor's degree in Engineering or CS or CIS or equivalent and 2 years of experience in the job offered. Applicants send resume to Pyramid Consulting Inc, 8665 Providence Drive, Noblesville, IN 46060.

CGI Inform. Sys & Management Consultants, Inc. is looking for Sr. IT Consultant to develop web portal applications using Oracle 9IAS, data warehouse using pl/sql, reports6I & discoverer. Min. MS plus exp. of Oracle X/8/9, 9IAS, PL/SQL, JavaScript. Contact lisa.halter@cgi.com. No calls. EOE

Innovative Consulting is looking for program or system analysts, IT engineers. Candidate must have BS/MS degree. Travel is required for some positions. Skills in C/C++, VB, Oracle, SQL, SAP, WebSphere, Java are plus. Good salary. Please send resumes to info@icscorpusa.com. EOE

Senior Software Engineer sought in Boston, Massachusetts area for development of internet based software for financial and administrative functions of healthcare organizations. Requirements are Bachelor's degree in engineering or the equivalent, and two years experience in VB/VBScript, Java/JavaScript, SQL Server, System Domain administration, HTML/XML, relational databases, IIS, networking, client/server, Nt4.0/2000, and Microsoft development tools. Send applications to Recruitment, Req. No. 2083, P.O. Box 1070, Burlington, Vermont 05402-1070.

Applications Programmer for NE OH to analyze user req., procedures & problems to automate processing/improve existing computer system; troubleshoot; eval. existing IS for effectiveness. Bachelor's Degree in Information Systems. Resumes to: HR, Custom System Company, 6670 W. Snowville Rd. Cleveland, OH 44141. EOE. No calls.

Information Management Research seeks applicants for the position of Computer Systems Analyst in Englewood, CO to design and perform quality assurance testing on document management software products customized for Japanese and other international customers. Requirements for the position include a bachelor's in computer science, computer engineering or closely related field and working knowledge in testing document management products and in Alchemy and Microsoft Frame Works. Respond by resume to Peter Galligan, Information Management Research, 6025 S. Quebec St., #260, Englewood, CO 80111.

Network Project Coordinator: for Healthcare Mgt. S/ware dvlpmt. Effect cross-cultural communication in-house & for outsourced s/ware projects. Intense client/vendor (India) liaison/consulting expected. Analyze medical/institutional requirements, incl. business/ staffing/insurance inputs; integrate process-centrd web-enabled s/ware. Plan, report & delegate, optimize dsgn elements & apps w/in time/budget. Req'd: 5 yrs exp. s/ware mgmt., Bach in Mgmt & Admin w/ certifs. in Microsoft Networking, Windows NT. Resume ONLY: #NPC, Velos, Inc., 2201 Walnut Ave., #208, Fremont, CA 94538. An EOE employer.

DATABASE DESIGN ANALYST sought by surgical clinic in Houston, TX. Must have degree & exp. Respond by resume only to Exec. Director, L/H - #10, Town & Country Plastic Surgery, 10565 Katy Frwy, Ste 100, Houston, TX 77024.

Seeking qualified applicants for the following positions in Orlando, FL: Senior Programmer Analyst. Formulate/define functional requirements and documentation based on accepted user criteria. Requirements: Bachelor's degree or equivalent* in computer science, MIS, mathematics, engineering or related field plus 5 years of experience in systems/applications development. Experience with C and/or C++, Java and RDBMS also required *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Sibi George, FedEx Corporate Services, 1900 Summit Tower Blvd., Suite 1400, Orlando, FL 32810. EOE M/F/D/V.

Programmer Analyst needed w/exp in web applications using J2EE, C++, Windows NT, Unix, Oracle Suite products, customizing records, panels, pages & menus using Peoplesoft HRMS, Peoplecode, SQR, People Tools, SQL & Oracle environment. Mail resumes to: Compu-Info, 410 Kingston Road, #2A, West Kingston, RI 02892.

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Systems Analysts to provide in depth analysis, design, development and testing services for database development projects; perform project scoping, project planning, project time and cost schedules, quality of deliverables and study and evaluate new technologies and methodologies; provide business guidance for complex user problems; guide teams by providing methodologies to be followed; interact with clients on project related issues. Require Masters degree or foreign equivalent in Computer Science or Business Administration. High salary, f/t position. Travel involved. Resumes to HR, Smartsoft International, Inc., 4898, South Old Peachtree Rd, Norcross, GA 30071.

Windows System Consultant wanted by reseller of accounting/fin. bus. appl. S/W. Requires B.S. or equiv. in Comp. Sci. plus 2 years exp. including Windows NT. Reply to H.R., Fantasia Technology Partners, LLC, 25 Lincoln St., Framingham, MA 01702.

Systems Architect for IT systems and customized applications provider in Roswell, GA. Minimum four years experience designing systems architecture and databases using JCL, ASP and SQL, including conducting business and systems integration analysis, designing applications in client/server, n-tier, intranet, extranet and web environments, integrating mainframe, legacy and windows systems and providing testing and training support. Send resume to Netwise, Inc., Attn: Human Resources, 130 Winterberry Court, Roswell, GA 30076.

Jr. Software Programmer. Assist in writing & testing comp. programs using C, C++, Javascript, Visual Basic (incl. VBScript & VBA), transact-SQL, SQL server 2000 DBA, Perl, ASP, HTML, JavaScript, XML & Crystal Reports in NT/Windows 2000 in a multi-tiered envir. Req: BS in Info. Tech. or Comp. Sci. 40hrs/wk. Job/Interview Site: Woodland Hills,CA. Send resume to Finity USA, Inc. @22123 Martinez Street, Woodland Hills, CA 91364.

Sr. Test Engineer needed in Fayetteville, GA to plan support software verification & UNIX & mainframe testing of complex revenue accounting project. Support test cases, test scenarios & reqs verification & traceability matrices. Establish test beds, test scripts, & test documentation, to include test strategies, application cross-references, test case design, test case execution, test reporting & test evaluation. Tools: UNIX, MVS, DOS, Windows NT, JCL, 4GL, TSL, ISPF, TSO, JES2, SDSF, RACF, ACF2. REQS: 3 yrs exp. in job offered. Please forward resume to D. Gelinas, Genisys Engineering Corp., 100 Havenbrook Ct, Fayetteville, GA 30214. No calls of faxes please. EOE.

Software Consultants needed at client sites to dvlp applic using MVC (Model 2) architecture dsgn & dvlp authentication systm in Weblogic. Tools used: J2EE-Java, Servlet, JSP, JSTL, EJB, JMS, RMI, JSF, JESS engine, Velocity, STRUTS, Taglibs, ANT, JBuilder, WebLogic, WebSphere, Iplanet, IBM MQ Series, C/C++, Oracle, Lotus Notes, Domino Server, Telnet API, MochaSoft, Unix, ASP, IIS, VB. Apply to: Global Consultants, Attn: Hireme, 25 Airport Rd, Morristown, NJ 07960.

Matrix Management Systems, Inc. is looking for:

Programmer Analyst: Should have a bachelors degree in computer science/related field with 3+ years of experience in the following: .Net Architect, VB.NET, ASP.NET, C# Architect, VB6.0, ASP, XML, XSL, SQL SERVER 7.0/2000, Oracle, Cold Fusion, Clear Quest, VC++, DB2, CICS, COBOL, Rational Rose, WinRunner and LoadRunner. We accept foreign education equivalent of the degree, or the degree equivalent in education and experience. Send Resume to Attn: HR, 932D, Atlantic Ave, Hoffman Estates, IL 60194.

Synergy has multiple openings for IT professionals. Qualified applicants must have BS with substantial experience. Strong background in SAP, SQL, ERP, VB, TCP/IP Suite, Oracle is plus. Send resumes to hr@synergy-com.com. Travel is required for some positions. Sponsor GC. EOE.

CMS (Customer Management Systems) has openings for experienced IT professionals to provide full life cycle IT & business solutions to clients. Qualifications include BS with experience using SQL, EJB, JSP, UML, OOP/OOD, Lotus, Java, VB, etc. Apply at: cms@earthdome.com. EOE. No Calls.

Delasoft, Inc., IL based IT company seeking Computer Professionals (multiple openings), w/relevant edu. & exp. to analyze, devl., design, test, sprt, maintain IT Projects, w/following skills: Java technologies, Web Tech (Web Sphere, Web Logic, XML, HTML, DHTML, UML); Unix, Linux, Solaris, Sybase, Oracle databases; Testing/QA tools: WinRunner, LoadRunner. TestDirector, Silk GUI & Rational Rose Tools, SQL server. C, C++, CICS, COBOL, SQL/PLSQL Languages; ABAP, SAP, BAAN, Siebel, TCP/IP, ERWIN & Win. envrmnts. Offering top $$+bnfts. 40% traveling to client sites in US. Resumes: 2200 S. Main Street, Suite 111, Lombard, IL 60148.

Computer Professionals (programmer, system analyst, software or project engineers) wanted E-Con. Candidates must have minimum BS or equivalent degree with IT experince. Use Weblogic 6.0 Application server, Java Servlets, XML. Please send resumes to: hrd@goecon.net. EOE. No calls.

Global Consulting is looking for programmer/system analysts, software engineers. Candidate must have BS with IT experience. Good skills in C/C++, Java, Oracle, EJB, J2BB, WebLogic, VB, HTML are plus. Traveling is required for some positions. Apply job@g-c-g.net EOE. No calls.

Data Consulting Group is looking for software engineers/programmers to develop security information service system using VB, Oracle based on client/server. Minimu BS with experience using Oracle, VB, Crystal Reports. Please send resumes to: recruiter@dcgroupinc.com. EOE. No calls.

Senior IT consultants (s/w engineer or system analyst) wanted by MD Soft, Inc. Duties include implementation of Siebel applications, programming. Must have BS plus experience using Siebel, Oracle, Powerbuilder. Sponsor H1/Green Card. Please apply at mdsoftinc@yahoo.com. EOE

Computer Software Engineer, Las Vegas, NV. Dvlp/create/modify computer aplctns software/spclzd utility prgrms. Analyze user needs/dvlp software solutions. Design/customize software for client use. Work individually or crdntg database dvlpmt as part of team. 2 yrs exp. Send res: Choopa.com, 1 Bethany Road, Bldg 2, Suite 24, Hazlet, NJ 07730, D. Aninowsky.

E Computer Technologies, Inc., is a computer and technology solutions provider of business-to-business and E-commerce application implementation and integration services specializing in E-purchasing systems. Our company currently has openings for the following:

Programmer Analysts: Design and develop financial based applications using client server technology, n-tire technologies with Oracle 8i, Oracle ERP, SYBASE databases using J2EE, WEBLOGIC 7, Netscape and Enterprise Server, IBM MQ Series, Extensible Style Sheet Language Transformations, Unified Modeling Language for design, and object-oriented analysis and design. Design product features to meet requirements and perform quality tests for new and existing features. Use knowledge of market and accounting principles to develop software. Need Bachelor's degree in Computer Science or Engineering. Need 2 yrs of exp.

Send Resume to: E Computer Technologies, Inc., 777 S. Central Expressway, Ste #4-F, Richardson, TX or via e-mail at: jobs@ecomputertech.com.

Computer Professionals, exp'd (multiple openings) sought w/relevant Bachelors or Masters depending on position & exp in QA, VB Script, Perl, Erwin, C, C++, VC++, I Planet, ASP, HTML, DHTML, Java Script, Sybase, Oracle, SQL Server, SQL, T-SQL, MS Access, Business Objects, Crystal Reports, DB2, Windows NT, CEML, Linux, IIS, Unix, PL/SQL, Cognos, Brio, ODBC Connectivity, Netscape Enterprise Server. Application Server of Cold Fusion, Data Modelling, Informatica, ETL application, e-business intelligence, Datawarehousing, SAS, ERP, CRM, RDBMS - Oracle; GUI Tools, ASP, J2EE, JSP, JDBC Java Script, EJB, Web Sphere, WebLogic, ASR/TTS, CTI. 40% travel to client sites req'd. Resumes to: JCG Technologies, Inc., 477 Congress St, 5th Fl, Portland, ME 04101.

Systems Analyst - Analyze user reqmts, procedures & problems to automate processing & to improve existing computer system. Confer w/personnel involved to analyze current operational procedures, ID problems & learn specific input & output reqmts such as forms of data input, how data is to be summarized & formats for reports. Upgrade system & correct errors to maintain system after implmtn. Prep time & cost estimates for completing projects. BS in Electronics or Comp Engg & 2 yrs exp reqd. 40hr/wk, 9a-5p, $17.63/hr. Send resumes to Rene Gaviola, OLRA Educational Foundation, 10101 Harwin Dr, #125, Houston, TX 77036.

R Systems, Inc. is a global information technology services company and it has multiple Job openings for the following positions at its corporate office in Sacramento as well as Project sites throughout the United States:

- Applications Programmer
- Database Analyst
- Software Engineers
- Systems Analyst
- Network Analyst
- IT Project Managers
- Business Analyst
- Sales Engineer
- Programmer Analyst
- Sales Manager
- Database Administrators
- Market Research Analyst

Minimum requirement: Bachelor's degree or equivalent and one year experience in the job offered. All positions may involve relocation to project sites.

Submit detailed resume and position applied for to:

Attn: Venkatesh Sundararajan
5000 Windplay Drive Suite 5
El Dorado Hills, CA 95762

Computers

PROCESS ENGINEER

R.R. Donnelley & Sons Co. (Nashville, TN), is seeking to hire a Process Engineer II to design, develop & document integration software used to automate & facilitate direct interaction between existing legacy systems & the general ledger. Assess the current systems/processes, recommend & implement design solutions to bridge & transform data to enable automation to the ledger. Develop & execute extensive testing plans & develop plans to migrate production ready applications to corporate production servers using version control software. Maintain, tune, execute network admin. on the development server. Must have Bach. degree in CIS & 3 yrs exp. Must have completed projects involving Visual Studio.net, Microsoft SQL Server, JAVA Script, Visual Basic Scripts, Access, ASP.net, XML, HTML, and ETL modeling, network administration & version control software. Please email resume to: corporateprocessengineer@rrd.com EOE

Software Engineers to analyze, design, develop financial appls using OOD,C++, VC++, MFC, Visual Source Safe, SQL Server, Rational Rose, CrystalReports, ADO under Windows/UNIX OS; perform system/functional req analysis;document detailed project specs and review conceptual model with users;provide training/user support for related appl software; performdebugging/modifications of existing software. Require: M.S. or foreignequiv. in CS/Engg.(any branch) with 1 yr exp in IT. High Salary. Comp.salary. f/t position. travel involved. Resume to: HR, Autosig Systems, Inc., 201,Price Hills Trail, Sugar Hill, GA 30518.

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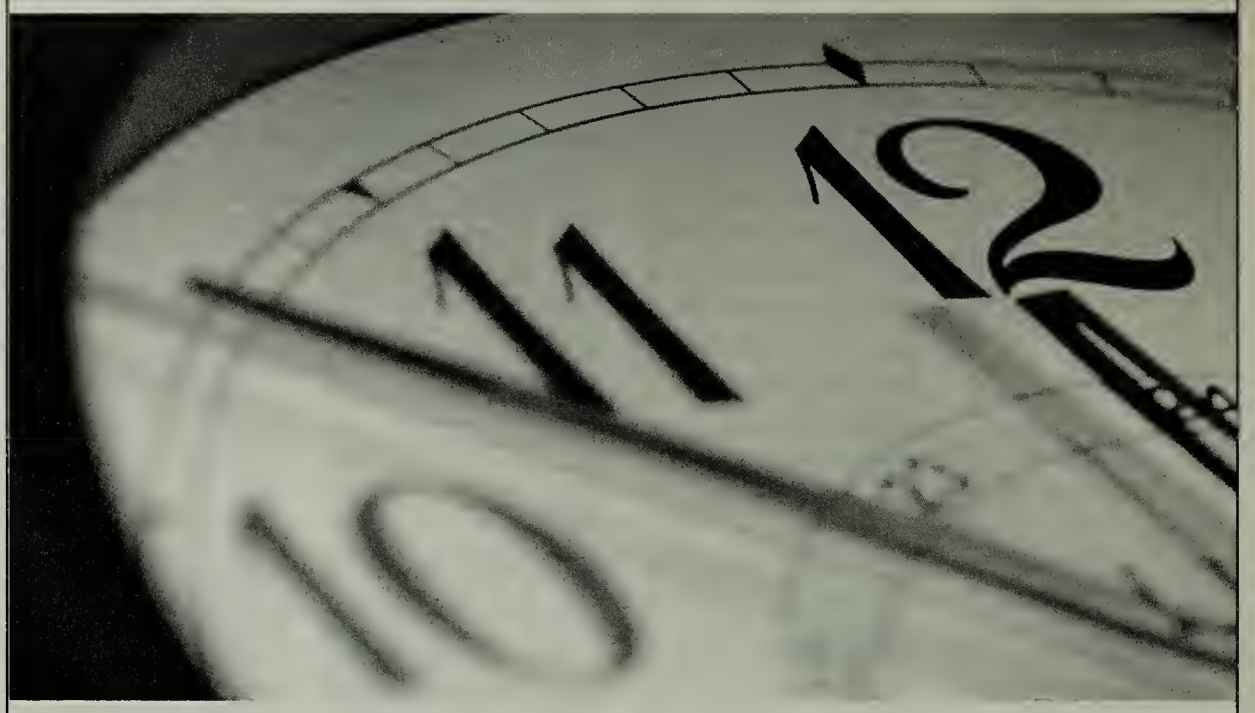

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Fax: (508) 875-4394

PUBLISHER/CEO
Bob Carrigan
(508) 820-8100

EXECUTIVE ASSISTANT TO THE CEO
Nelva Riley
(508) 820-8105

VICE PRESIDENT/CIO
Rick Broughton
(508) 620-7700

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Matthew J. Sweeney
(508) 271-7100

VICE PRESIDENT/CIRCULATION
Debbie Winders
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Fax: (508) 270-3882

SALES BUSINESS MANAGER
Laureen Austermann
(508) 820-8522
Fax: (508) 270-3882

KEY ACCOUNTS
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SOUTHEASTERN STATES/ ILLINOIS/ MICHIGAN
ACCOUNT DIRECTOR: Lisa Ladle-Wallace (904) 284-4972, 5242 River Park Villas Dr., St. Augustine, FL 32092, Fax: (800) 779-8622; **ACCOUNT EXECUTIVE:** Deborah Crimmings (508) 271-7110, 500 Old Connecticut Path, Framingham, MA 01701, (508) 879-0700, Fax: (508) 270-3882

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Maryfran Johnson,
editor in chief
(508) 820-8179

DEPARTMENT EDITORS

Don Tennant, News editor.....(508) 620-7714
Craig Stedman, assistant News editor.....(508) 820-8120
Mitch Betts, Features editor.....(301) 262-8243
Tommy Peterson, Technology editor.....(508) 620-7729

REPORTERS

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Robert L. Mitchell, senior editor.....(508) 820-8177
Mark Hall, editor at large.....(503) 391-1158
Gary H. Anthes, national correspondent.....(703) 536-9233
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Tom Monahan, online director.....(508) 820-8218
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Ken Mingis, online news editor.....(508) 820-8545
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David Ramel, e-mail newsletter/online editor at large.....(508) 820-8269
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RESEARCH

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COPY DESK

Michele Lee DeFilippo, managing editor/production.....(508) 820-8128
Bob Rawson, assistant managing editor/production.....(508) 271-8015
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ORAPHIC DESION

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ADMINISTRATIVE SUPPORT

Linda Gorgone, office manager.....(508) 820-8176
Cheryl Dudek, administrative assistant.....(508) 820- 8178

CONTRIBUTING COLUMNISTS

Pimm Fox, Michael Gartenberg, Dan Gillmor, Paul Glen, Barbara Gomolski, Thornton A. May, David Moschella, Bart Perkins, Nicholas Petreley, Paul A. Strassmann

CONTRIBUTING WRITERS

Mary Brandel, Russell Kay, Sami Lais, Kathleen Melymuka, Robert L. Scheier, Steve Ulfelder

GENERAL INFORMATION

TELEPHONE/FAX

Main phone number.... (508) 879-0700
All editors unless otherwise noted below
Main fax number..... (508) 875-8931
24-hour news tip line... (508) 620-7716

E-MAIL

Our Web address is **www.computerworld.com.**
Staff members' e-mail follows this form: **firstname_lastname@computerworld.com.**
For IDG News Service correspondents: **firstname_lastname@idg.com.**

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SCO Suits

based Clarity Payment Solutions Inc. "Most of us here consider it a waste of everybody's time."

Kuchlein said he runs Linux servers almost exclusively. "I'm about to double our installed base as well" for Clarity's main production system, he said. "I'm buying a truckload more servers, and they're all going to be Linux as well. The SCO thing hasn't even come up as a discussion."

Corey Corrick, director of operations at Web services provider Flamenco Networks in Alpharetta, Ga., said he will continue to use Red Hat Inc.'s Advanced Server 3.0 Linux for the company's managed database and application servers despite the lawsuits last week. "We're waiting for things to shake out in court," Corrick said. "[SCO] keep[s] suing, but they haven't shown anything."

"If people would prefer to work through the court system, then we'll file a complaint and we'll work through the court system," said Darl McBride, SCO's president and CEO. "Depending on which way customers want to go, we'll accommodate their desires."

McBride, speaking during a conference call about SCO's financial results, didn't respond directly when asked if the company would refund any licensing fees if it loses the cases against DaimlerChrysler and AutoZone as well as an ongoing copyright infringement suit against IBM.

SCO sued DaimlerChrysler in a Michigan state court, charging that the automaker violated its software licensing agreement with SCO by refusing to provide a requested "certification of compliance" as part of a software audit. The suit against Memphis-based AutoZone, filed in federal court in Nevada, claims that the retailer is illegally running versions of Linux that contain Unix code copyrighted by SCO. Both suits seek unspecified damages.

A DaimlerChrysler spokeswoman declined to comment about the suit, saying that the automaker hadn't received a copy of the document. Information on IBM's Web site indicates that DaimlerChrysler has used Linux for the past two years on a 108-node IBM server cluster for vehicle crash analysis and simulation.

Ray Pohlman, a spokesman for AutoZone, said his company also had not yet seen the lawsuit and couldn't comment about SCO's copyright claims. "It is our understanding, however, that SCO has sent letters to hundreds of companies, making similar allegations," he said. Pohlman wouldn't discuss AutoZone's use of Linux.

Red Hat Inc. confirmed that AutoZone had used Red Hat Linux to run its in-store intranet until "several months ago." AutoZone has also been a SCO customer, using SCO Unix to run applications such as its point-of-sale systems.

McBride said DaimlerChrysler and AutoZone were targeted because they failed to respond to SCO's warnings that violations of its intellectual property would no longer be tolerated. In the case of DaimlerChrysler, McBride said it was "one of thousands of companies" that received written notices from SCO late last year detailing their obligations under the vendor's Unix System V source code license deals.

"Some companies responded appropriately and certified their compliance with the terms of the agreements," McBride said. "Some companies, including DaimlerChrysler, have failed to respond appropriately."

Dion Cornett, a financial analyst at Decatur Jones Equity Partners LLC in Chicago, said the charges against DaimlerChrysler and AutoZone will be difficult for SCO to prove.

For example, SCO officials discussed AutoZone's alleged use of some specific Unix file types or shared-source libraries during their conference call, Cornett said. But AutoZone says it doesn't use those files, according to Cornett. "Without knowing what building blocks AutoZone is using, the claim looks something like a fishing expedition," he said.

"I don't think they're going to get anywhere," said Bill Claybrook, an analyst at Harvard Research Group in Harvard, Mass. "They have actually struck with some good-sized customers here. But I don't think anybody's going to rush out and buy a license for [SCO's Unix technology]. It's basically another attempt to wrangle money out of people." **45249**

Continued from page 1

BizTalk Server

and customer theft, according to Paul Duchouquette, director of IT at the Los Angeles-based retail music chain.

The IT department worked with Xavor Corp., a Microsoft-certified partner in Irvine, Calif., to set up an interface in Microsoft's SharePoint Services so that Virgin loss-prevention specialists can set conditions under which they want to be alerted, such as when a high number of refunds are being issued by a certain cashier. That threshold information is stored in XML in SQL Server, and BizTalk's rules engine accesses the XML file, said Ammara Masood, a senior vice president at Xavor.

Every 10 minutes, BizTalk polls the transactions logged in each store's point-of-sale systems, and the transaction data is passed to the process orchestration engine, she said. Business rules are triggered, and when suspicious activity is detected, employees are alerted through the SMTP server, Masood noted.

"They can literally go to that register and ask the cashier some questions," Duchouquette said, adding that there has been a change in culture as a result. "The real-time reporting actually creates a psychological impact to employees considering theft."

Before the system went live in January, Virgin did loss prevention through observation and analysis of transaction logs sent to a third party. But the 85 third-party reports took 15 days to arrive and were cumbersome to analyze. Now, BizTalk's business activity monitoring pushes transaction data to SQL Server Analysis Services, and there are only four consolidated reports, Masood said.

Virgin is also using some of BizTalk's more traditional functionality. The software maps the universal product code from the transaction logs with the artist, title, SKU and other data stored in its JDA Software Group Inc. merchandising system, which uses an IBM DB2 database running on an AS/400, Masood said.

Peggi Douglass, director of IT services at Retirement Systems of Alabama in Montgomery, was looking at Java-based business-rules products when she learned that BizTalk Server 2004 would include that functionality. BizTalk made more sense because it was less expensive and RSA is a Microsoft shop, she said.

RSA provides retirement and health insurance benefits to about 290,000 employees, and the IT department wanted a rules engine to physically separate the business rules from the application code so that its systems are easier to maintain and modify. Before, the rules were buried in the code of the individual applications, Douglass said. Under the new system, a rules change can be made in one place.

Developers use BizTalk Server's Business Rules Composer to build the rules and policies, such as a name change requiring proof documentation. RSA hopes to eventually allow its business users to make modifications to rules by themselves, but so far, the company has found that the product isn't as easy for non-IT staffers to use as it would like. Douglass said RSA may look to third-party products with better graphical components.

RSA has also been dabbling with the workflow capabilities in BizTalk Server for validating addresses for those who receive retirement benefits on a periodic basis.

Jess Thompson, an analyst at Gartner Inc., said the business process management functionality was poor in BizTalk Server 2002 because it supported the automation of processes that involved only applications or Web services. The new version adds support for business processes involving human-based interaction, he said. **45241**

NEW FEATURES

BizTalk Server 2004

- Scalable business rules engine
- Business process management
- Ability to represent human workflow in business process diagrams
- Business activity monitoring
- Integration with Visual Studio .Net development environment

SIEBEL ADD-ONS

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FRANK HAYES ■ FRANKLY SPEAKING

Legal Clarity

WHEN IS A LAWSUIT A GOOD THING? When it will actually clear up a problem. Which is why, strange as it seems, I'm actually glad VeriSign just sued the Internet Corporation for Assigned Names and Numbers [QuickLink 45059].

The problem is that VeriSign contends that ICANN doesn't have the authority to regulate new domain-name-related businesses such as VeriSign's late, unlamented Site Finder service. ICANN believes it does have that authority.

And until a court decides who's right, we've got a mess.

What sort of mess? Think back to last fall, when VeriSign rolled out Site Finder by changing the way its .com root servers worked. Those servers contain the central database of which .com domains belong to which IP addresses.

So when VeriSign gimmicked its servers, a user who mistyped a domain name didn't get an error message, he was rerouted to an advertising-driven VeriSign Web site. Meanwhile, applications broke if they depended on the now-missing error messages. And e-mail got misrouted. And some Internet service providers responded by gimmicking their own DNS servers to work around VeriSign's gimmickry. Eventually, ICANN threatened a lawsuit of its own. VeriSign backed off. Stability returned.

Hey, compared with more episodes of Gimmick Wars and potential destabilization of the Internet, VeriSign's lawsuit sounds pretty good.

When I talked to VeriSign CEO Stratton Sclavos in the wake of the Site Finder fiasco, he told me what VeriSign really wanted was some clarity when it came to launching new domain-name-based services. He'd tried to respect ICANN's quasi-regulatory role, he said. But some of VeriSign's proposals had been stalled in ICANN's fuzzy, ill-defined, consensus-driven process for years. There was no way to tell how long approval might take, or if a proposal would ever be approved.

Apparently, Sclavos never did get the clarity he wanted. Now VeriSign is headed for court with ICANN. Charges will fly. Rhetoric will heat up. Lawyers will get rich.

And, yes, we'll finally get some clarity. Because at the center of VeriSign's suit is that question: Can ICANN regulate domain-related business ideas or not?

If the court decides ICANN is right, that will provide clarity. It will mean ICANN has to approve any new business ideas that will affect how domain names are handled.

But it will also mean big new responsibilities for ICANN. No more claiming that it's just a technical standards body. No more slow, fuzzy approval processes. No more wishy-washy decision-making. ICANN will have to become a full-fledged regulator, with processes and practices that are open, transparent and well defined. In short, if ICANN wins, ICANN will never be the same.

And if the court decides VeriSign is right? That provides clarity, too. ICANN won't get to regulate Site Finder, or foreign-language domain names that use non-ASCII characters, or the Wait Listing Service that would let VeriSign customers back-order .com domain names whose registrations are soon to expire. ICANN's role will just be to set technical standards.

But that will leave a regulatory gap. Think it'll last long? Don't count on it. Lawmakers regularly try to stick their fingers in the domain-name pie. The International Telecommunication Union has proposed replacing ICANN with a World Trade Organization-style group. And the Commerce Department, which created ICANN, can create a new agency — or decide to leave domain-name businesses unregulated.

In other words, if VeriSign wins, domain regulation will never be the same, either. There may be more regulation. Or less. But one thing is clear: It'll be different.

And that *is* a good thing — even if it's not exactly the clarity that VeriSign is looking for. **45201**

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com**.

The Care and Feeding of Users

Four or five times a year, this single, attractive female user tearfully asks sysadmin pilot fish first thing in the morning to reset all her passwords. Fish always does it, and the user leaves smiling. But fish can't understand why she's so upset about a simple password reset – until he finally mentions it to someone else in the office. "Her co-worker explained that she usually used her boyfriend's name as a password," fish says, "and would want to change it when she had been dumped."

SHARK TANK

Not Her Fault, Really

Panicky user can't turn off the laptop she has borrowed, and now she's afraid she has broken it. "There's no switch or indication of on/off anywhere," says IT pilot fish who's called to help. "Finally, we find something that says 'I/O' and press it, but nothing happens. Another user overhears our discussion and says, 'You got the right key, you just have to hold it for 10 seconds. And if you hold it too long, it turns back on again.' I explain to the user it's not her fault – that the idiots who designed this thing were jerks."

Out of Whack

All day long, this user complains, his monitor keeps going on and off. After a few weeks of whacking it to get it working again, he calls IT manager pilot fish, who investigates – and figures it out. "Giving it a whack shook the entire desk," sighs fish. "That moved the mouse just enough to turn off the screen saver. I disabled the screen saver and probably saved a monitor, computer and desk from getting destroyed."

Wise Choice

Office manager gets peeved when the weather forecast on the company's intranet is wrong. "She complained to me that the CIO needed to make sure the weather was reported correctly," says the local IT support pilot fish. "When I said we get the forecast from Weather.com – it does say this on the Web site – she responded that it was still the CIO's fault since it was on our Web site. But I didn't bother forwarding the complaint – knowing the CIO would take it poorly."

Hey, If It Works, It Works

This user just can't remember her password. "She would forget it between Friday and Monday morning," says support pilot fish. "She would call and say she couldn't log in. I would ask, What is your password? She invariably replied, 'I forgot.' So I made her password *iforgot*. When she called up the next Monday I asked her what her password was. She replied, 'I forgot.' And that was the end of my problem."

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